

CADSTAR

Jeroen Leinders

CADSTAR Distribution Manager



Introduction

- I'm the CADSTAR distribution manager for Zuken managing approximately 30 resellers worldwide, based out of my home office in the Netherlands. Having a diploma in electronics and been involved in electronic product design and manufacturing since 1985. I'm working for Zuken since 1999, first being in charge of the CADSTAR Sales in Belgium, Netherlands and the Luxembourg, appointed as European Distribution Manager in 2001, before being appointed as worldwide Distribution Manager in 2005. I'm married and have two daughters. Hobbies: I like to go on holiday, drive motor bike and play badminton



Contact Details

Zuken GmbH Sales Office Benelux

Jeroen Leinders

CADSTAR Distribution Manager

Brugweg 50D

6102 TL Echt

The Netherlands

P: +31 475 481568

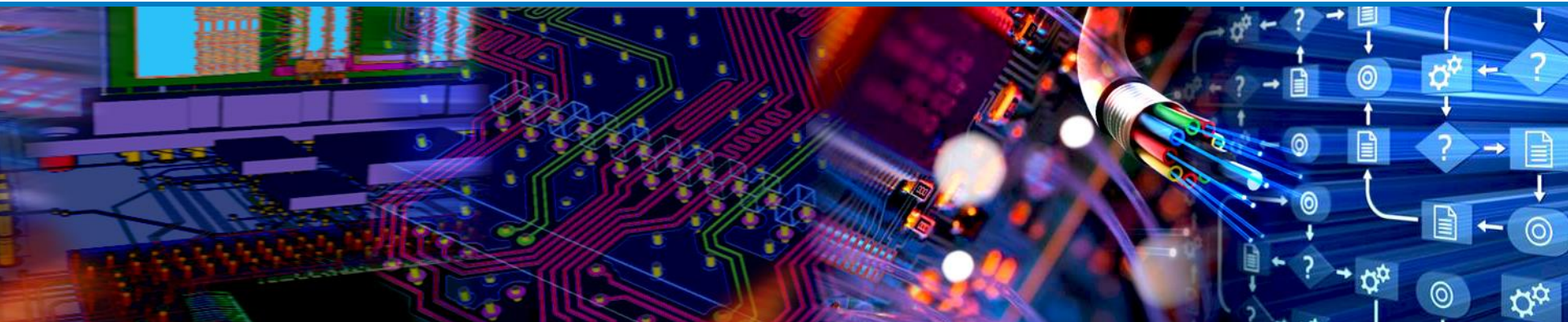
M: +31 6 22557408

E: jeroen.leinders@zuken.com

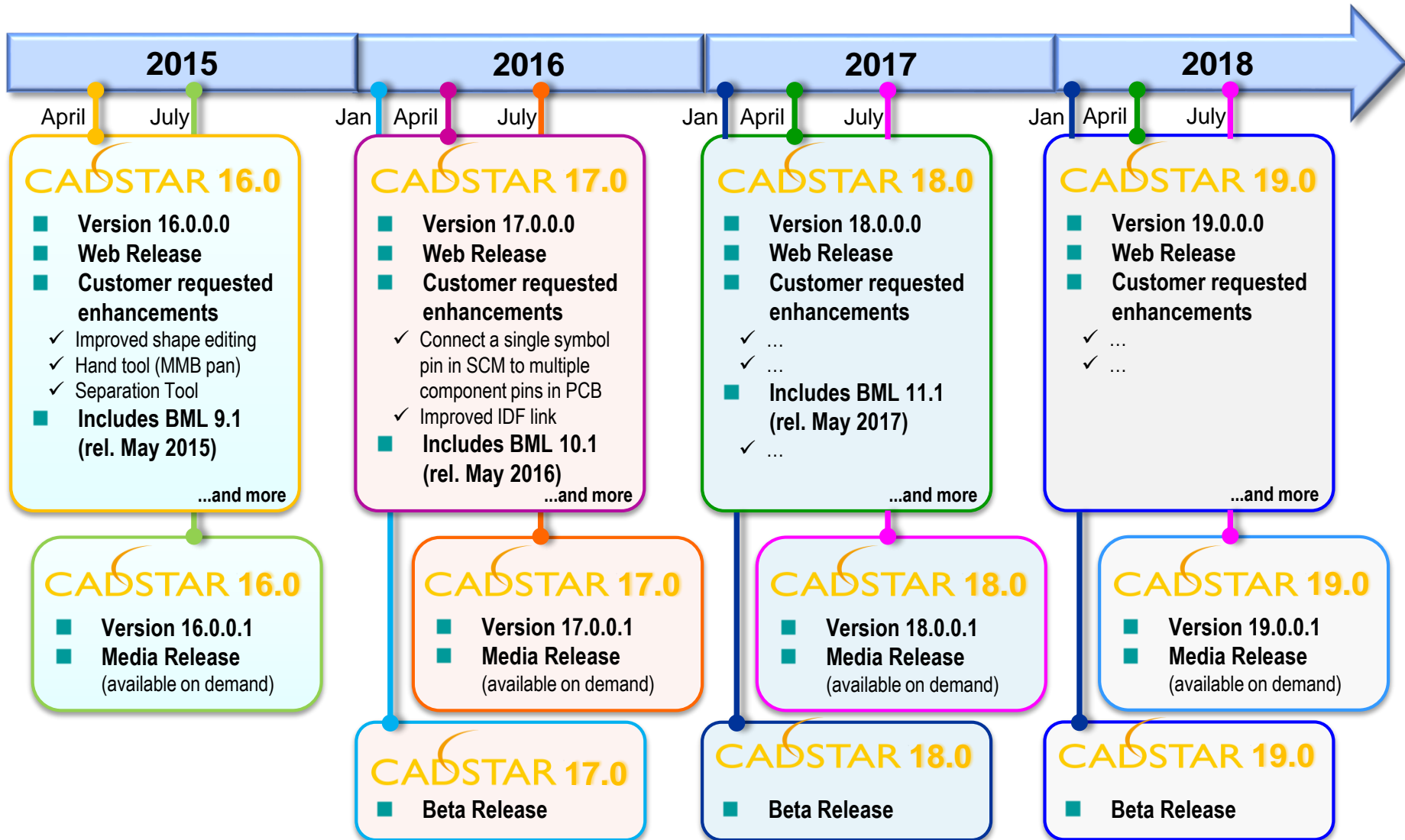
CADSTAR Release Schedule

(All plans are subject to change)

Presented by Jeroen Leinders
CADSTAR Distribution Manager



Current CADSTAR release schedule



**The release schedule is as usual a subject of change if circumstances require!*

What's targeted for CADSTAR 17.0

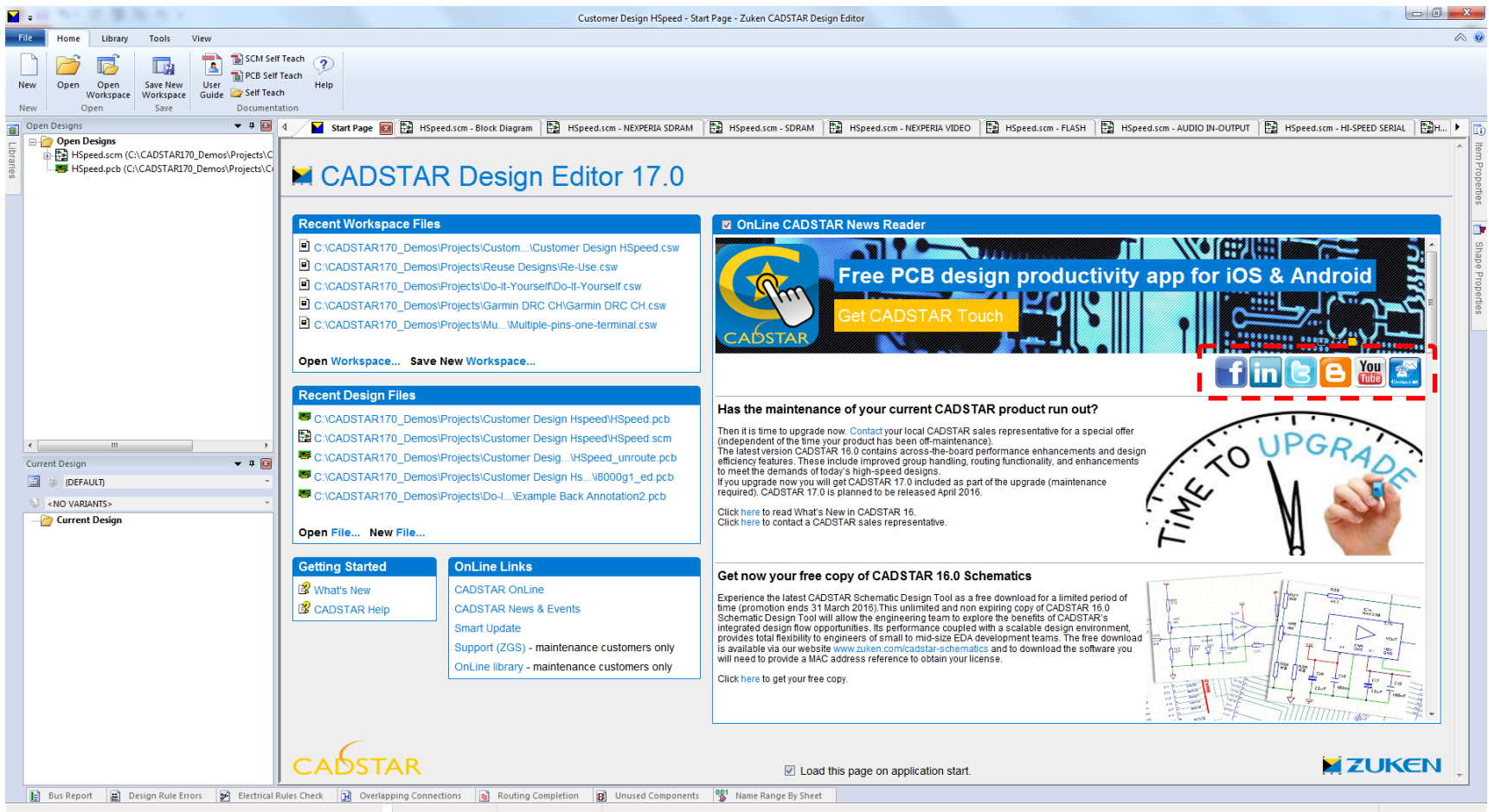
(All plans are subject to change)

Presented by Jeroen Leinders
CADSTAR Distribution Manager



What's targeted for CADSTAR 17.0

- Updated Online CADSTAR News Reader
 - Social media is becoming more and more important



The screenshot displays the CADSTAR Design Editor 17.0 interface. The main window is titled "Customer Design HSpeed - Start Page - Zuken CADSTAR Design Editor". The interface includes a menu bar (File, Home, Library, Tools, View), a toolbar, and a ribbon. The main content area is divided into several sections:

- Recent Workspace Files:** Lists recent workspace files such as "C:\CADSTAR170_Demos\Projects\Custom...Customer Design HSpeed.csw".
- Recent Design Files:** Lists recent design files like "C:\CADSTAR170_Demos\Projects\Customer Design HSpeed\HSpeed.pcb".
- OnLine CADSTAR News Reader:** This section features a prominent advertisement for a "Free PCB design productivity app for iOS & Android" titled "Get CADSTAR Touch". Below this, there are social media icons for LinkedIn, Facebook, Twitter, and YouTube. Further down, there is a section titled "Has the maintenance of your current CADSTAR product run out?" with a "TIME TO UPGRADE" graphic and a hand pointing to a clock. Below that, another section offers a "free copy of CADSTAR 16.0 Schematics" with a schematic diagram.
- Getting Started:** Includes links for "What's New" and "CADSTAR Help".
- OnLine Links:** Lists links for "CADSTAR OnLine", "CADSTAR News & Events", "Smart Update", "Support (ZGS) - maintenance customers only", and "OnLine library - maintenance customers only".

The bottom of the interface shows a status bar with various tool icons and a checkbox labeled "Load this page on application start." The ZUKEN logo is visible in the bottom right corner.

What's targeted for CADSTAR 17.0

- Support of Windows 10



What's targeted for CADSTAR 17.0

- Connect a single symbol pin in SCM to multiple component pins in PCB



www.vishay.com

Si7465DP

Vishay Siliconix

P-Channel 60 V (D-S) MOSFET

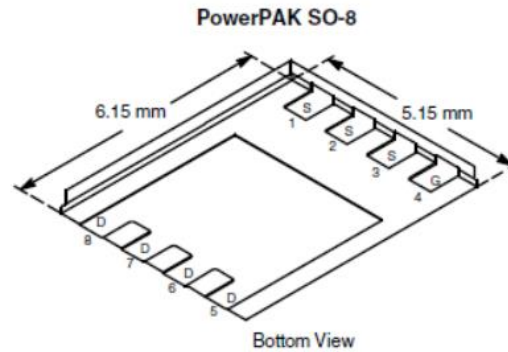
PRODUCT SUMMARY			
V _{DS} (V)	R _{DS(on)} (Ω)	I _D (A)	Q _g (TYP.)
-60	0.064 at V _{GS} = -10 V	-5	26
	0.080 at V _{GS} = -4.5 V	-4.5	

FEATURES

- TrenchFET® Power MOSFET
- New Low Thermal Resistance PowerPAK® Package with Low 1.07 mm Profile
- Material categorization:
For definitions of compliance please see www.vishay.com/doc?99912

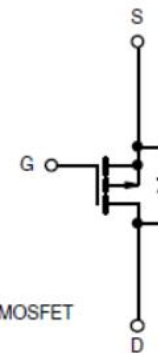


RoHS
COMPLIANT
HALOGEN
FREE
Available



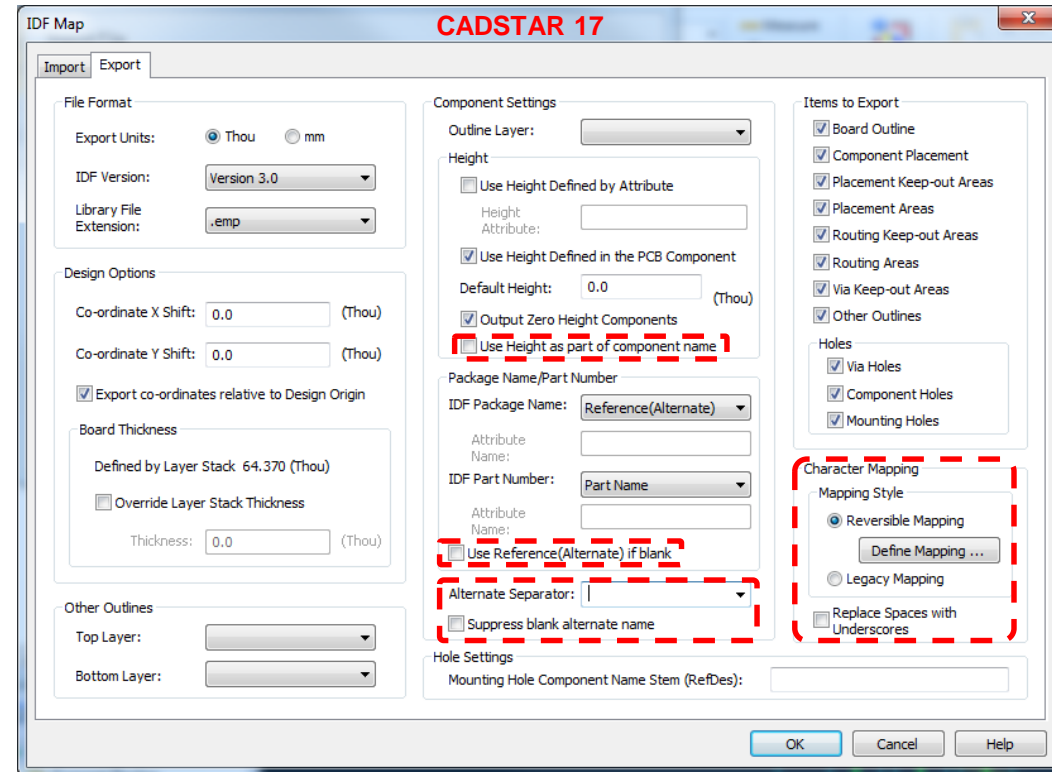
Ordering Information:

Si7465DP-T1-E3 (Lead (Pb)-free)
Si7465DP-T1-GE3 (Lead (Pb)-free and Halogen-free)



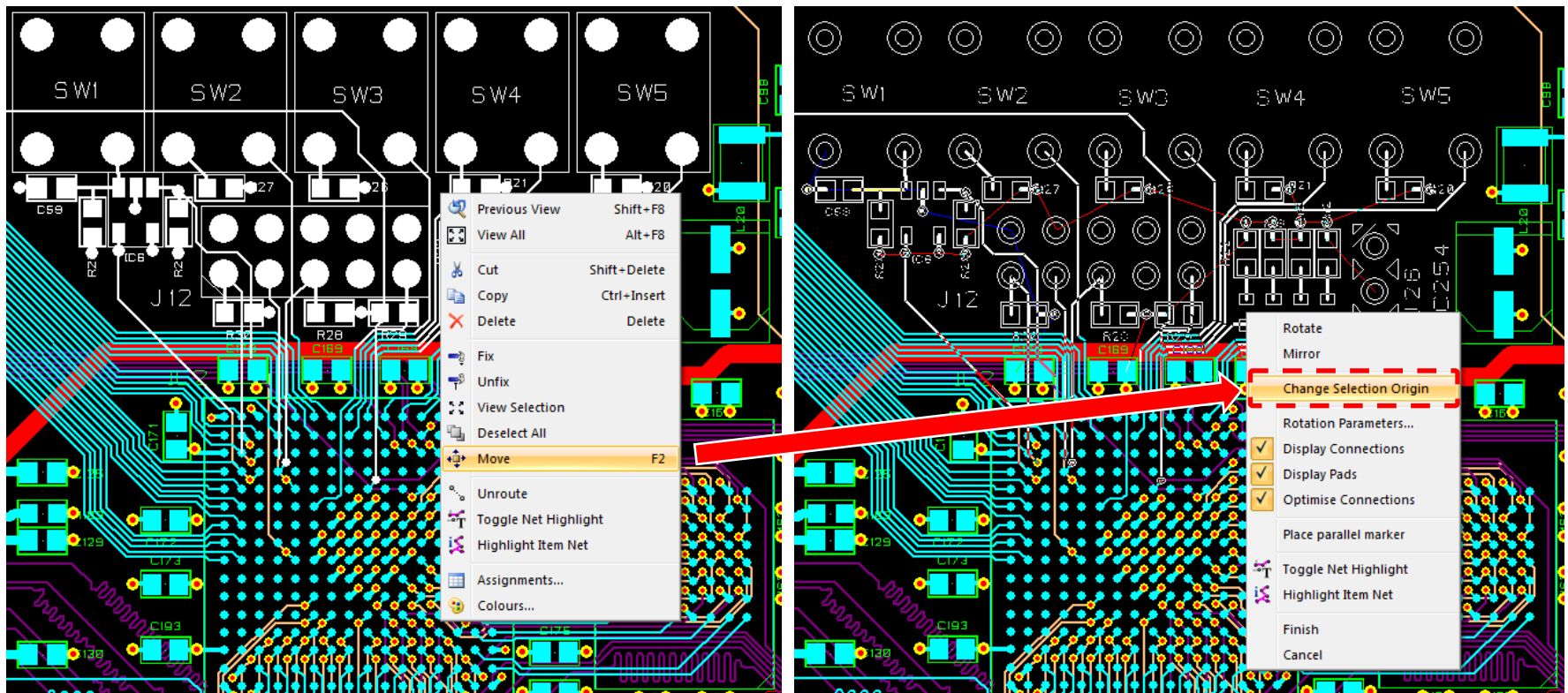
What's targeted for CADSTAR 17.0

- IDF Export - Advanced naming configurations
 - Provide option(s) to perform name mapping for Ref/Alternate in a similar way to the old LatimerCAD IDF link (i.e. non-reversibly but simple)
 - Some users have built 3D model libraries with symbols named in the way the old LatimerCAD IDF link generated them. It was not possible to generate the same names using the CADSTAR IDF Link



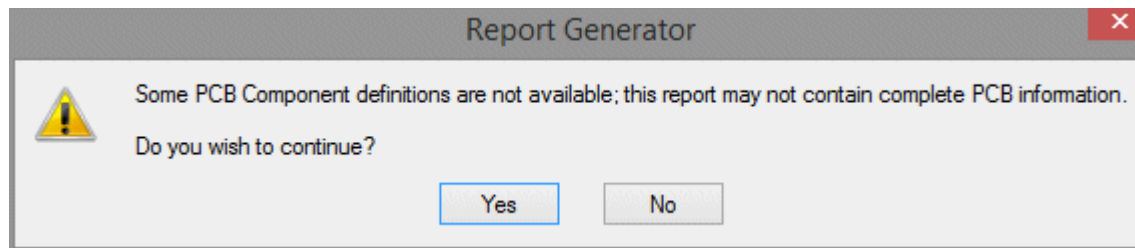
What's targeted for CADSTAR 17.0

- Allow user to define a temporary selection origin desirable for a specific operation; multiple selections of items, including groups and reuse blocks
 - Similar behavior as in the Place & Route Editor



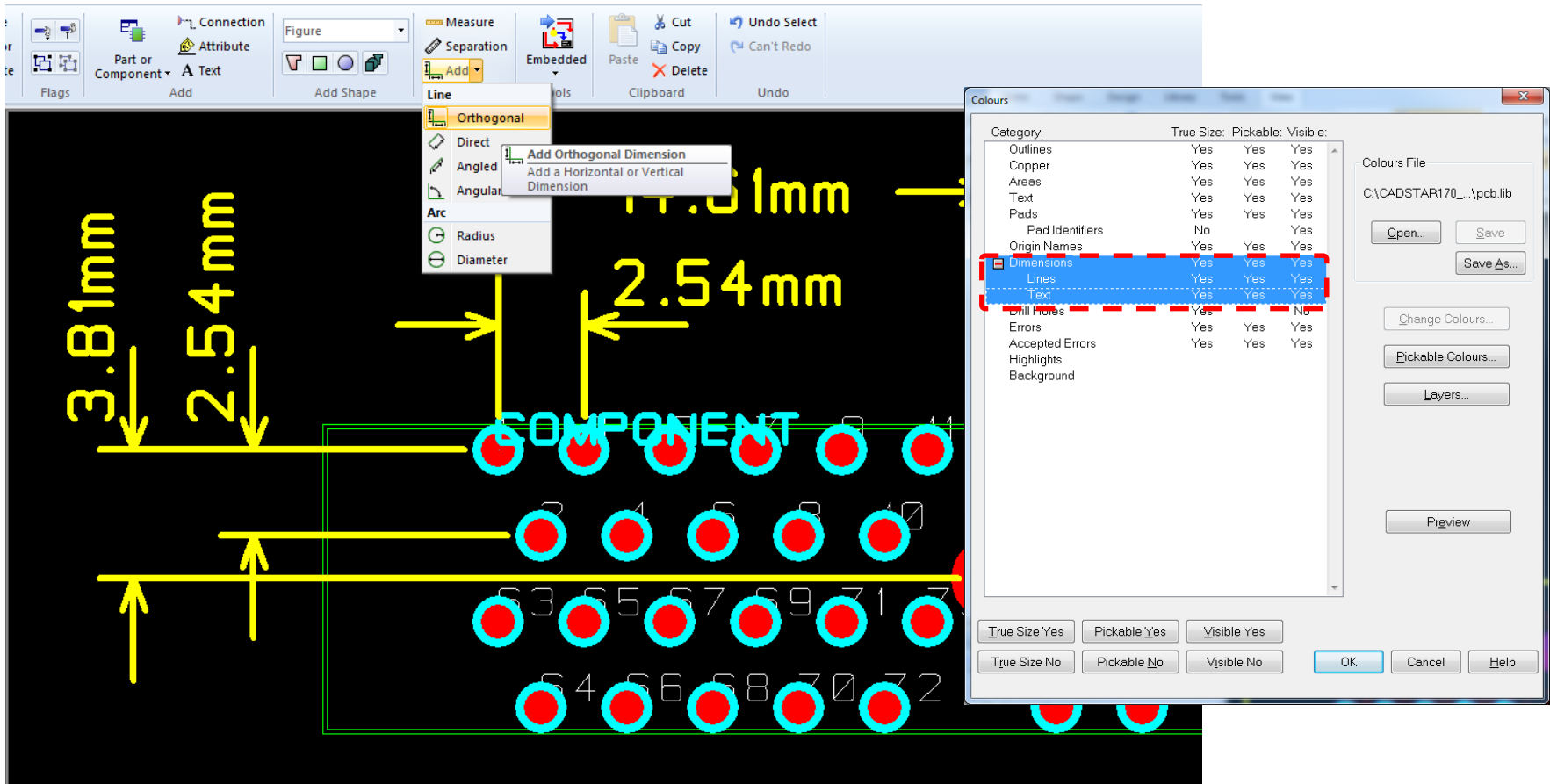
What's targeted for CADSTAR 17.0

- Report Generation without Library
 - From a SCM design, the ability to run a component-type report from the Report Generator is now possible
 - When there is no component library
 - Or there are missing components in the library
 - Since component definitions may not be available, the report generated may not contain complete information. You will be warned of this



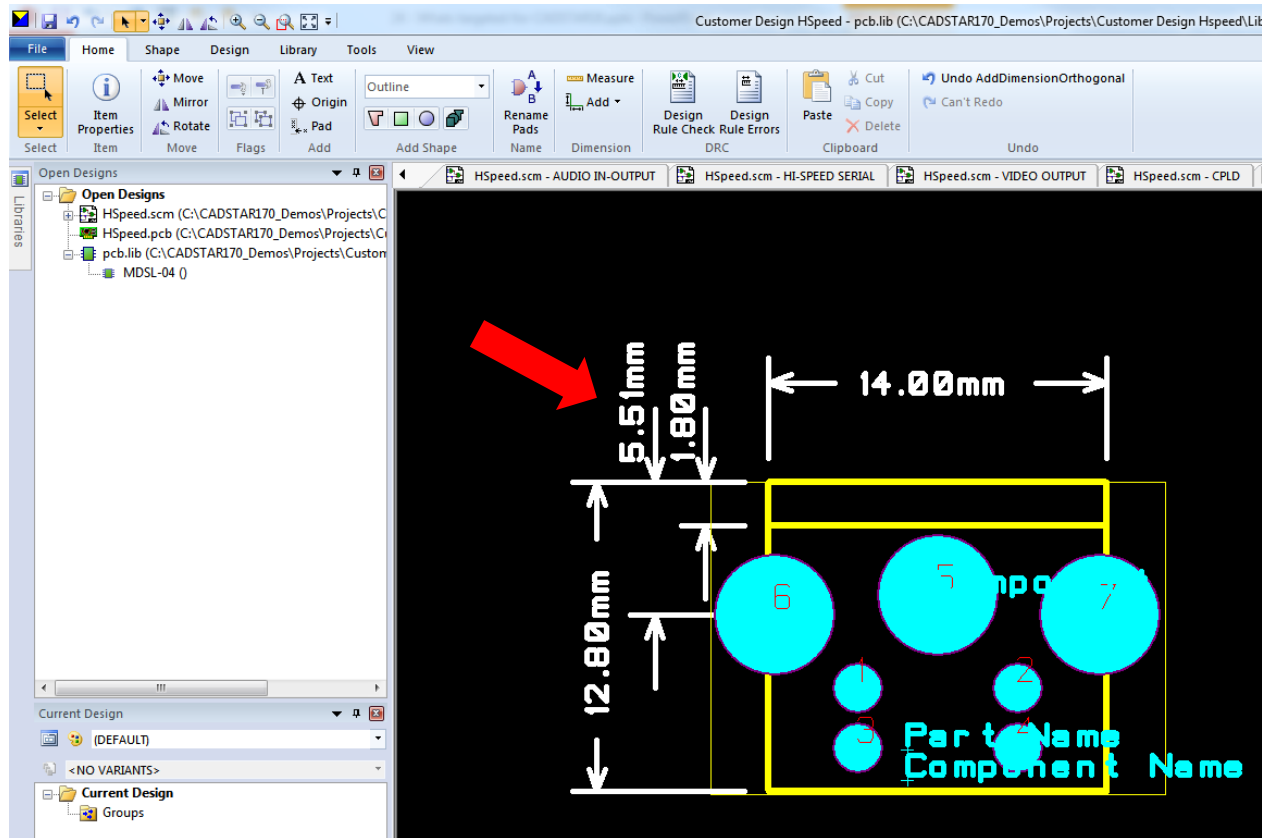
What's targeted for CADSTAR 17.0

- Allow dimensions to be stored in footprints



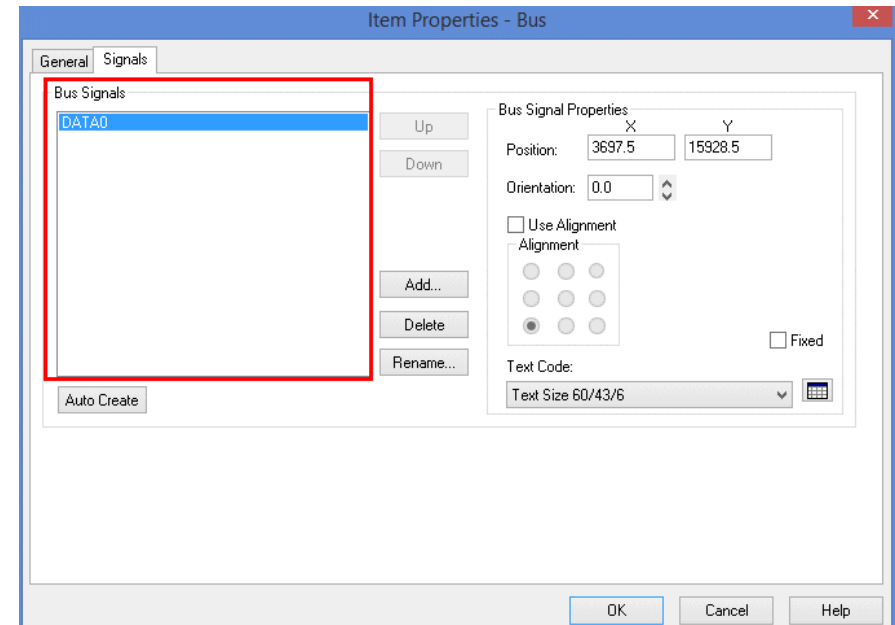
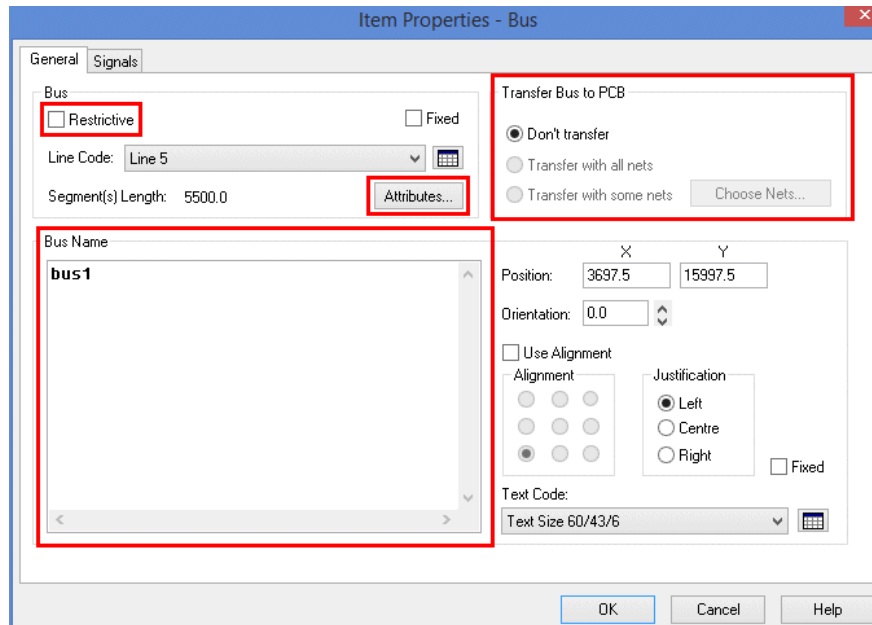
What's targeted for CADSTAR 17.0

- Apply Readability of component dimension text in Design Editor



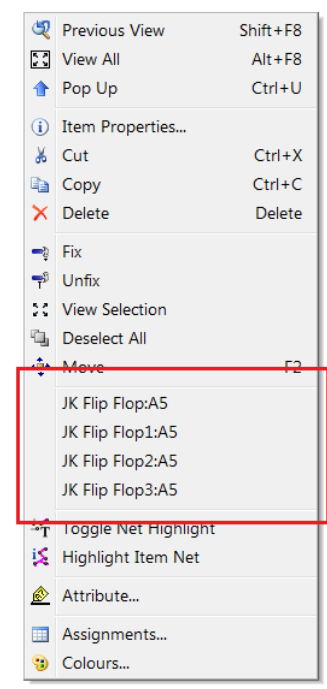
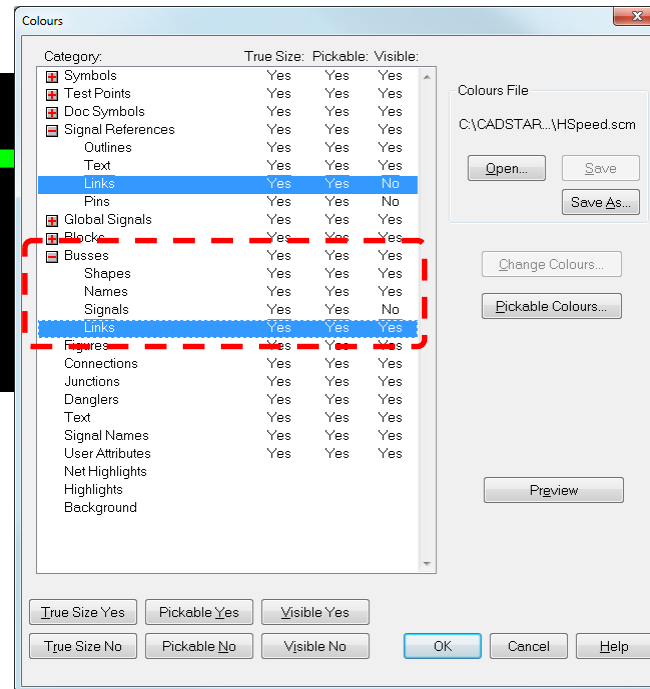
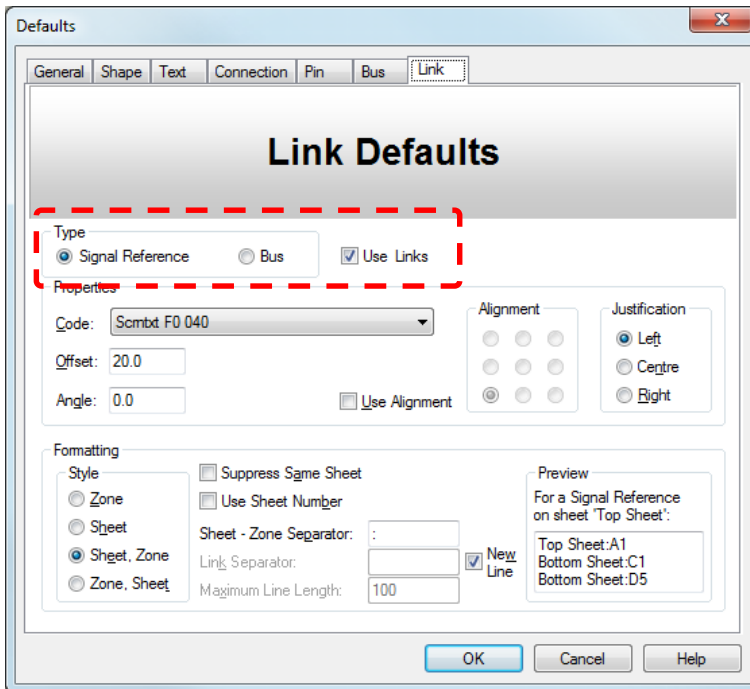
What's targeted for CADSTAR 17.0

- When adding a bus of the same name as an existing bus, the existing bus properties (restrictive bus properties, attributes, bus signals) to be replicated on the added bus (even to other sheets where the same bus occurs)
 - Buses sharing the same name needs to be considered to be the same bus
 - It reduces the chance that bus restrictions can be overlooked or incorrectly entered on multiple versions of the same item



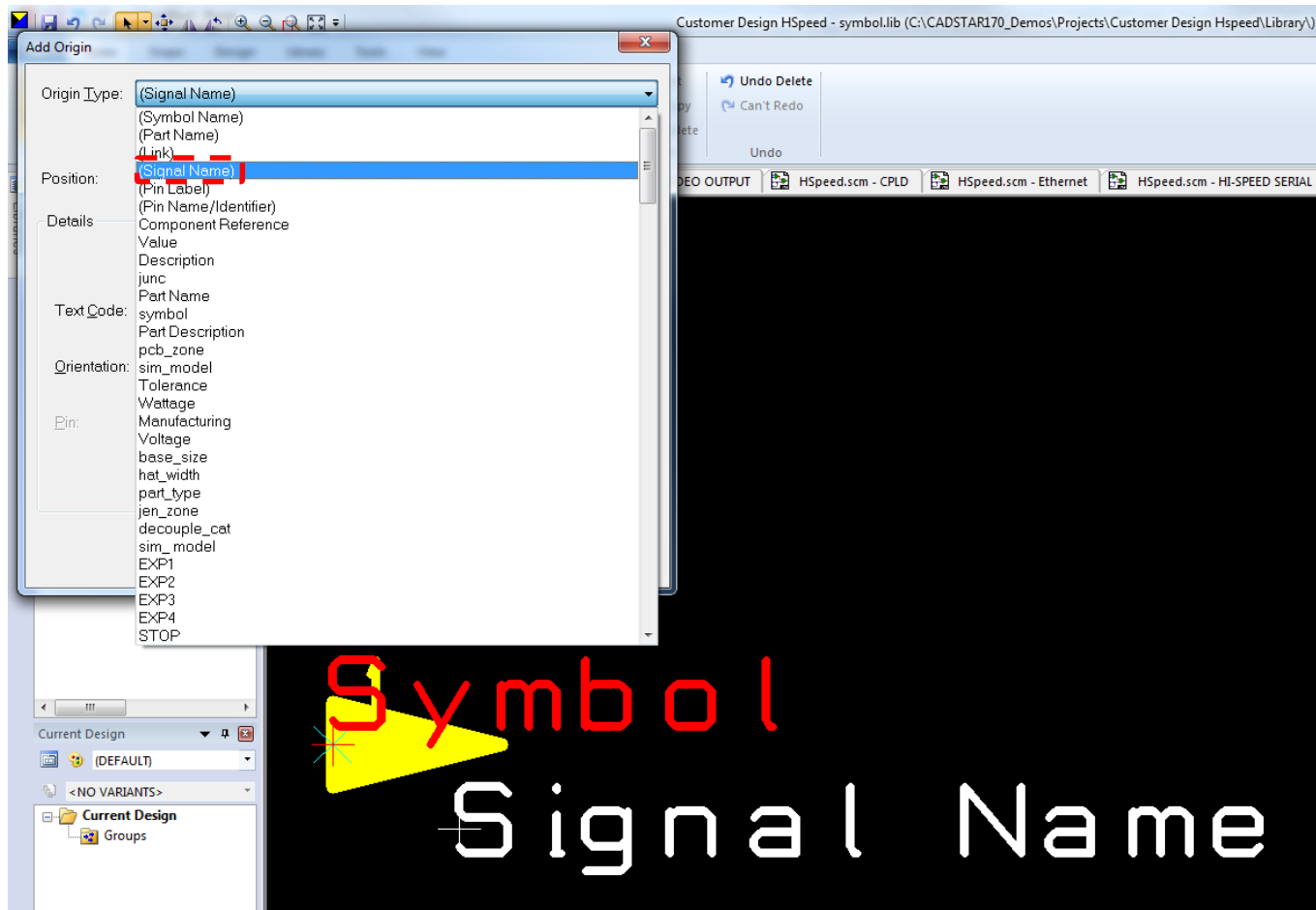
What's targeted for CADSTAR 17.0

- Bus Links
 - An enhancement has been made to buses allowing you to view and/or 'jump' to other buses with the same name elsewhere in the design
 - The link can be double clicked on the canvas to navigate to other buses in the design or by using the context menu



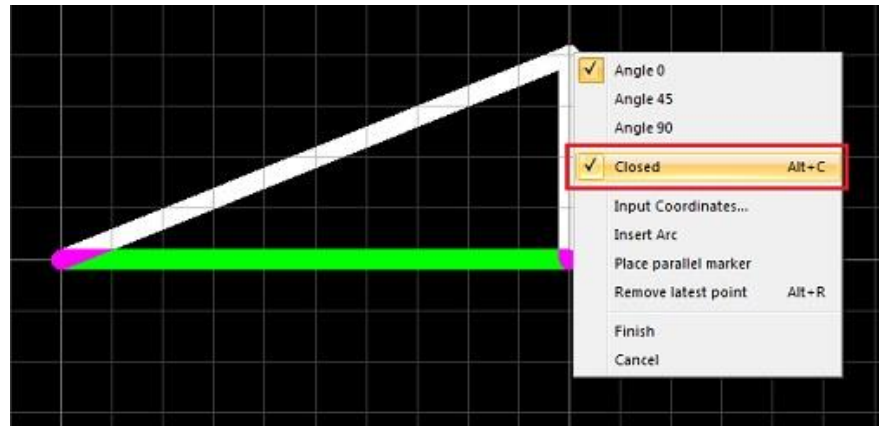
What's targeted for CADSTAR 17.0

- Signal Name Origin
 - It is now possible to add a Signal Name Origin to single pin symbols



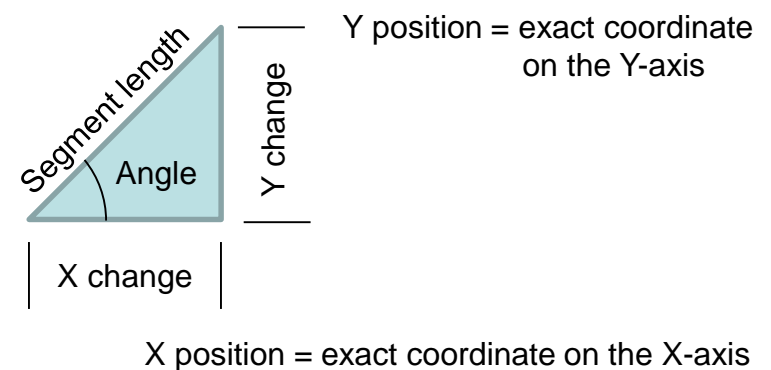
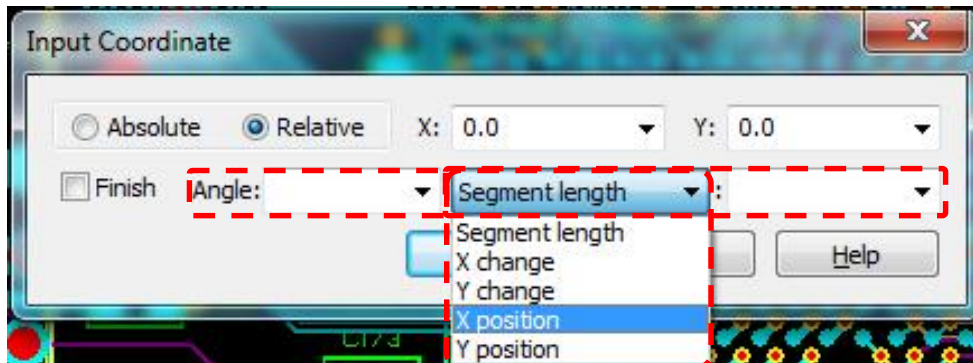
What's targeted for CADSTAR 17.0

- Closed Shape Toggle
 - This new command (added to the context menu) that can be selected toggles the shape that is under construction between being an open and a closed shape

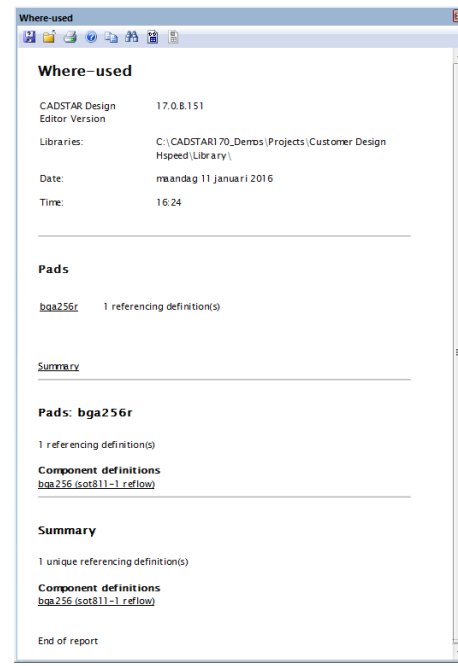
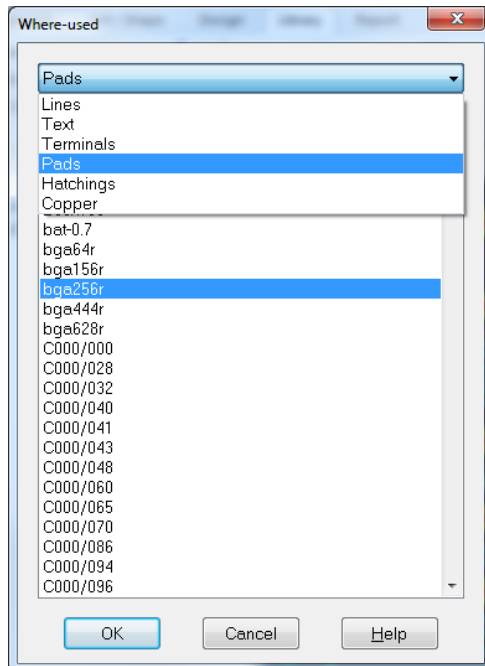
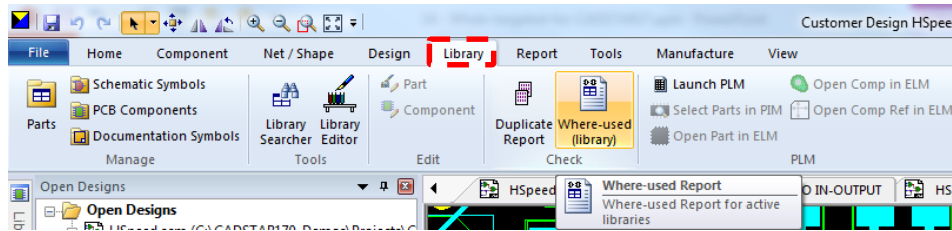
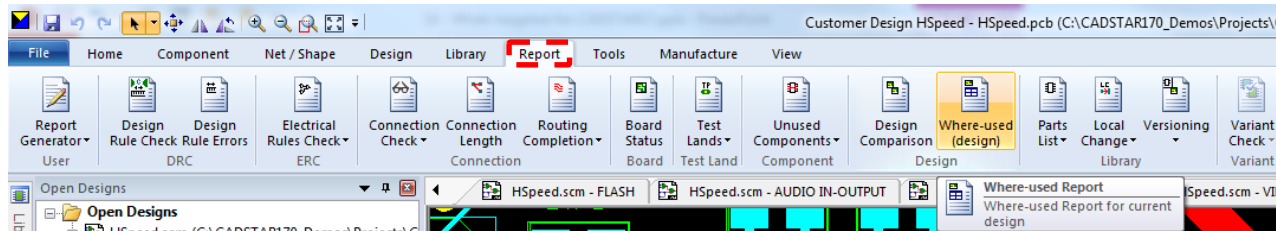


What's targeted for CADSTAR 17.0

- Enhanced Input Coordinate dialog to add polygon segment by angle
 - Segment length - The length of the desired line segment
 - X change - The distance the line segment will travel along the X axis
 - Y change - The distance the line segment will travel along the Y axis
 - X position - The position on the X axis where the line segment will end
 - Y position - The position on the Y axis where the line segment will end



What's targeted for CADSTAR 17.0

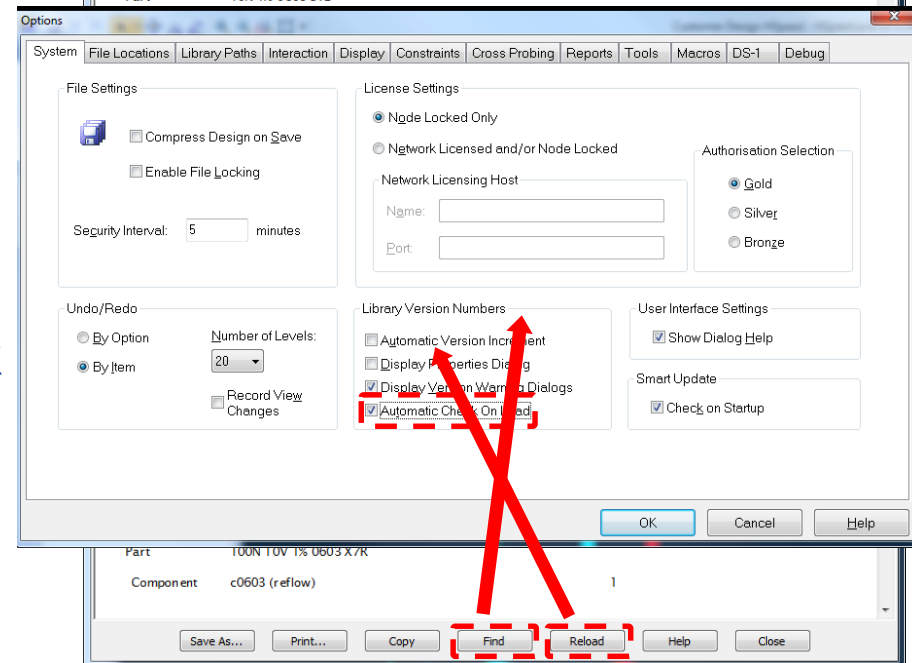
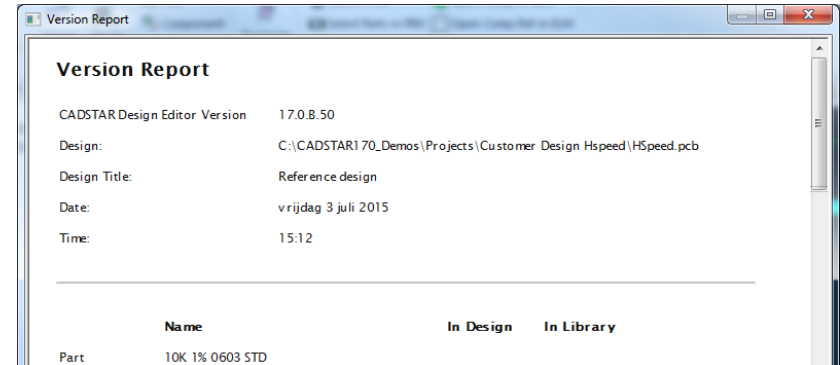


- “Where used?” report
 - A new report has been introduced that will find all the symbols/components that use specified assignment codes
 - The report can be run on the libraries or the current Schematic or PCB design
 - The generated report will be 'active and clicking any of the listed definitions or design items will open that definition or select the design item

What's targeted for CADSTAR 17.0

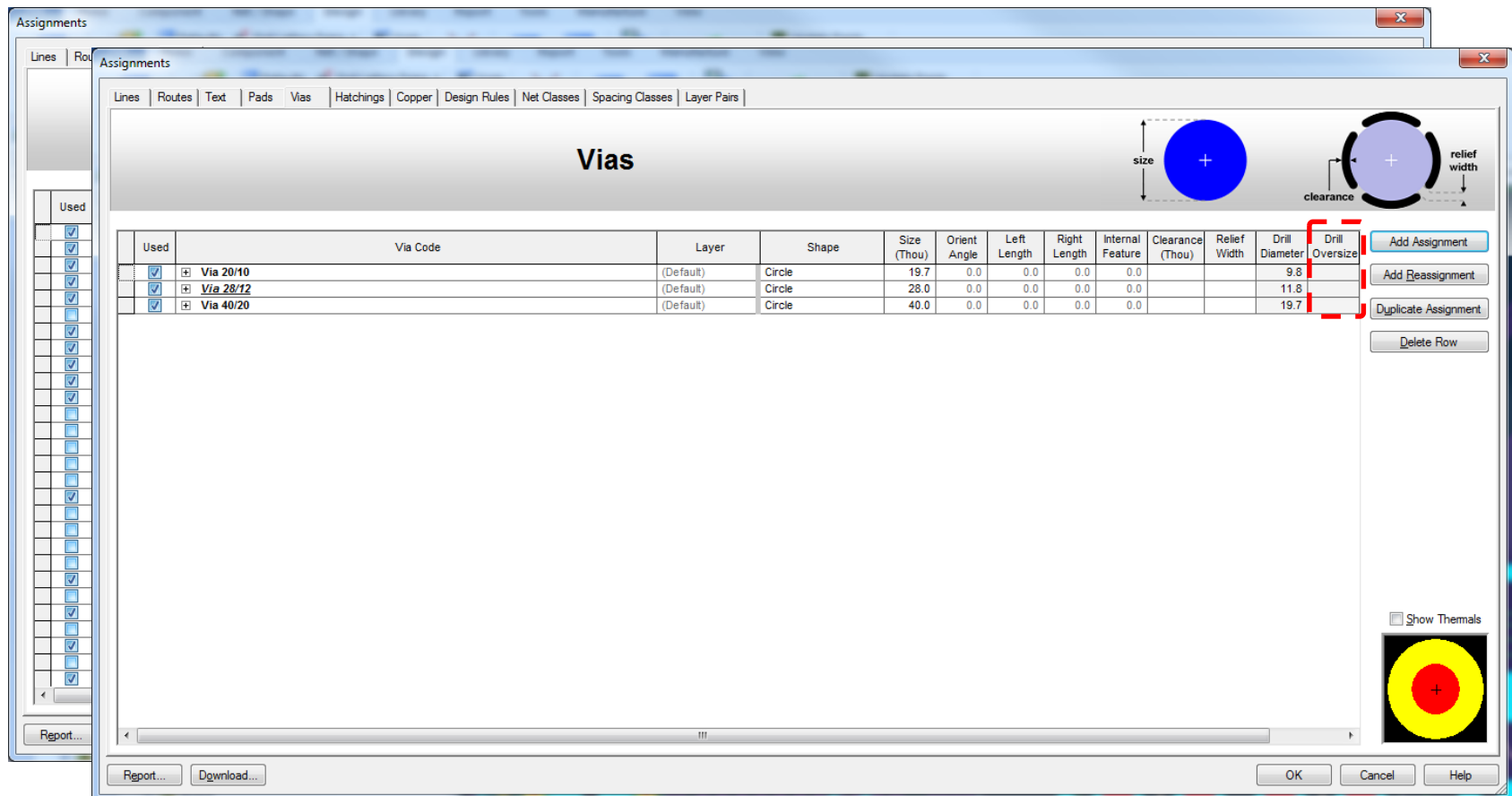
- Automatic Version Check Report
 - Automatically run the Version Report on design load to highlight any version differences in the design compared to the Library

- Additional options to:
 - Search the report (Find)
 - Reload Parts and Components from Library
 - Enable/disable automatic check on load



What's targeted for CADSTAR 17.0

- Enhanced drill oversize
 - Supporting the ability to define a different oversize value for each pad & via code



Vias

Used	Via Code	Layer	Shape	Size (Thou)	Orient Angle	Left Length	Right Length	Internal Feature	Clearance (Thou)	Relief Width	Drill Diameter	Drill Oversize
<input checked="" type="checkbox"/>	Via 20/10	(Default)	Circle	19.7	0.0	0.0	0.0	0.0			9.8	
<input checked="" type="checkbox"/>	Via 28/12	(Default)	Circle	28.0	0.0	0.0	0.0	0.0			11.8	
<input checked="" type="checkbox"/>	Via 40/20	(Default)	Circle	40.0	0.0	0.0	0.0	0.0			19.7	

Buttons: Add Assignment, Add Reassignment, Duplicate Assignment, Delete Row

Checkbox: Show Thermals

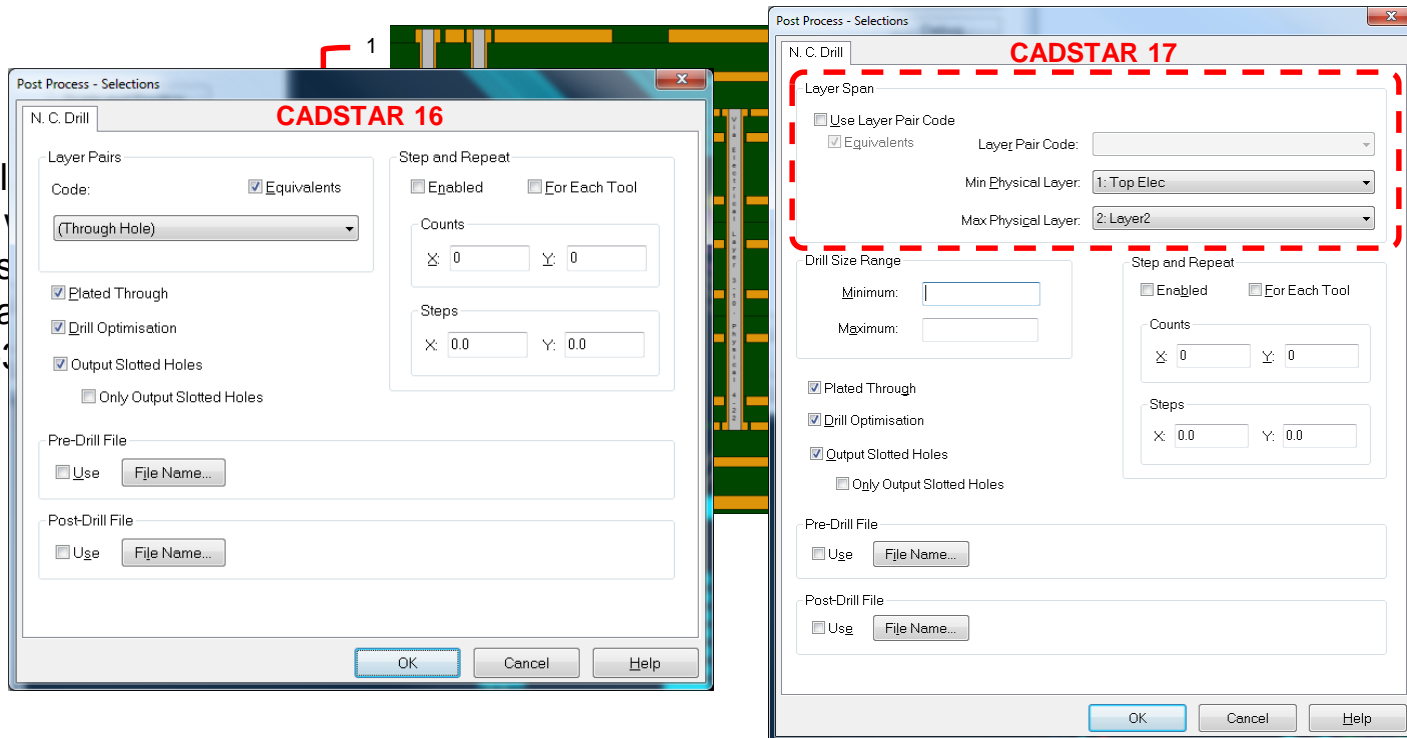
Buttons: Report..., Download..., OK, Cancel, Help

What's targeted for CADSTAR 17.0

- Optimized drilling process in order to create drill data by process
 - It is now possible to generate Drill Drawings and N.C. Drill output for adjacent layers (Min/Max Physical Layer) without having to specify a layer pair code. This is intended for manufacturers using laser drills which can only drill between adjacent layers

The following spans will be used so must be defined in the Min/Max Physical Layer: 1-2, 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 8-9, 9-10, 10-11,

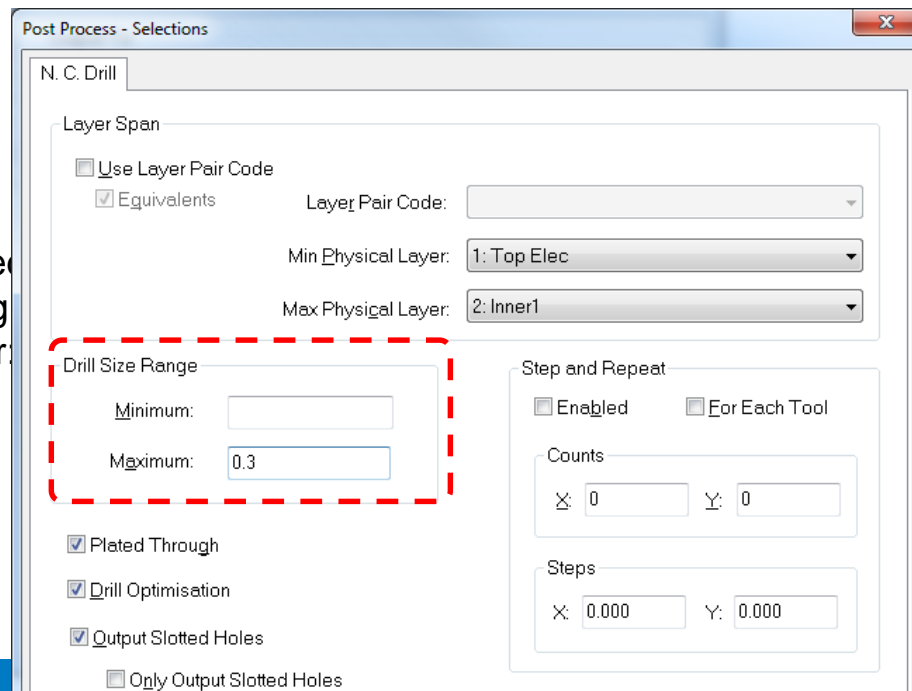
Layer spans will be used so must be defined in the Layer Pair Codes: (Through Hole)



What's targeted for CADSTAR 17.0

- Optimized drilling process - Drill Size Range
 - Any vias that contain the min/max layer will be processed during output except through-hole vias
 - The through-hole via 3-10 can cause a problem when generating the output for layer span 3-4 and 9-10 because it is a mechanical drill hole that can end up in the laser drill output! Drilling multiple times in the same hole can cause damage and should be avoided. This can be achieved by setting Drill Size Range - Maximum to the size of the largest laser drill hole

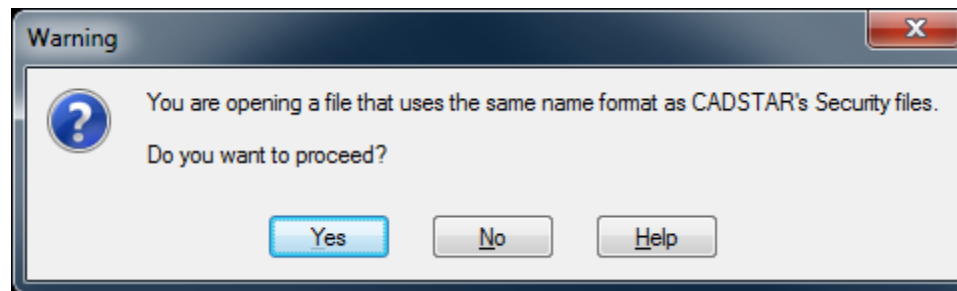
The following layer spans will be laser drilled so must be output using Min/Max Physical Layer: 1-2, 2-3, 3-4, 9-10, 10-11, 11-12



Following layer spans will be mechanically drilled so must be output using Layer Pair Codes: 3-10, 1-12 (Through Hole)

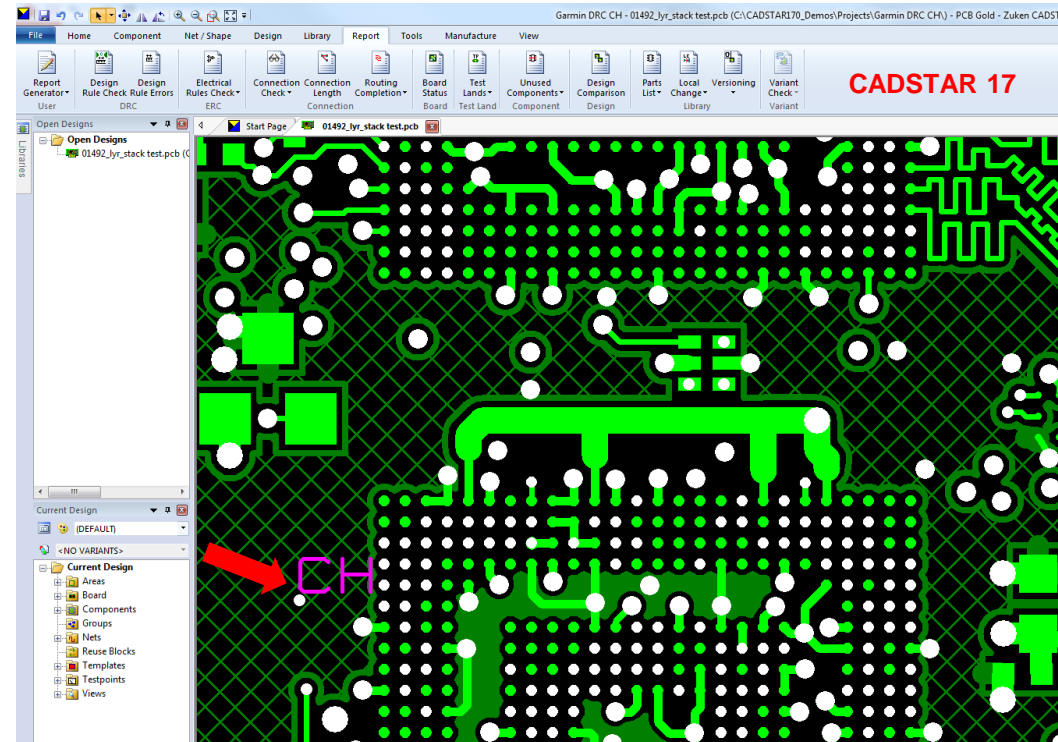
What's targeted for CADSTAR 17.0

- Warn the user if backup files are opened into CADSTAR
 - !HSpeed.scm
 - !HSpeed.pcb
- This also applies to SYM, CMP or DSY files as well



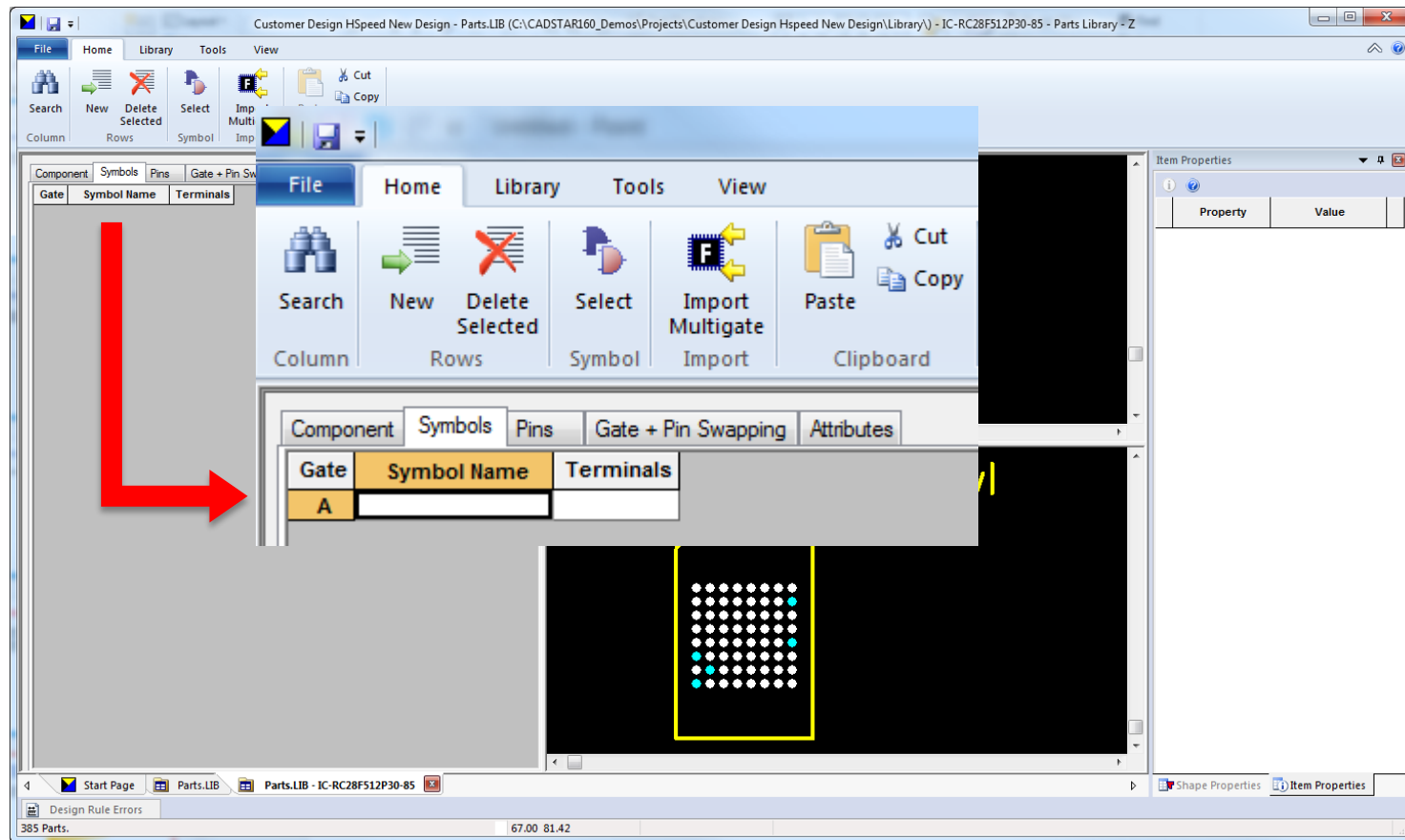
What's targeted for CADSTAR 17.0

- Enhanced DRC unconnected pads in hatched copper
 - If a user has a hatched copper area it was possible for a via of the same net as the copper to fall in between the hatching lines and not actually connect to the copper. CADSTAR produced correctly an error message, but it also produced (incorrect) errors for vias which did connect



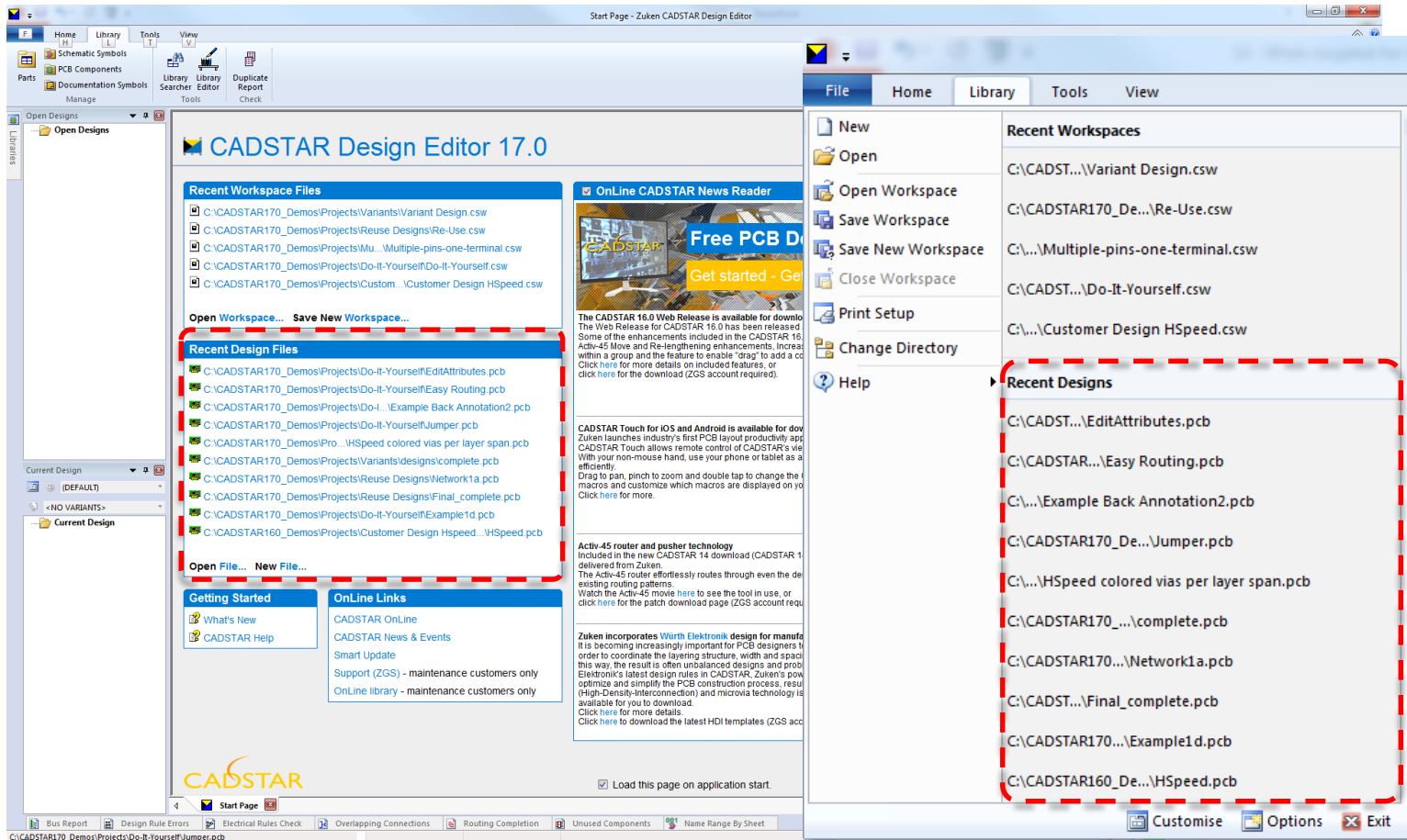
What's targeted for CADSTAR 17.0

- In Library Editor - Part Definition - Symbols - Have the first new row exist by default



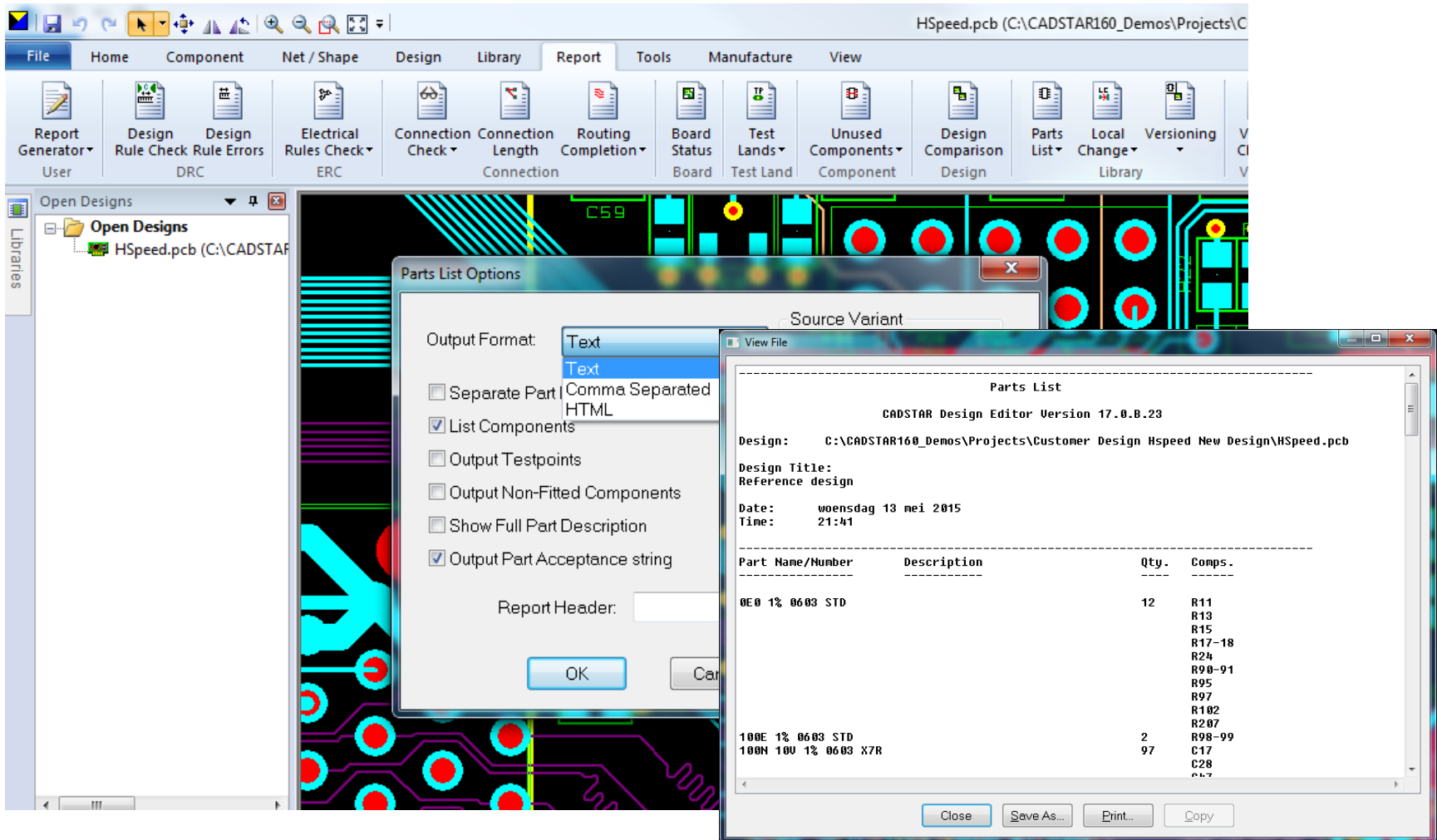
What's targeted for CADSTAR 17.0

- More Recent Design Files
 - The number of recent files in CADSTAR has been trebled. The start page and file menu will now show up to fifteen recent files



What's targeted for CADSTAR 17.0

- Output of part lists and testlands reports, option to output plain text



What's targeted for CADSTAR 17.0

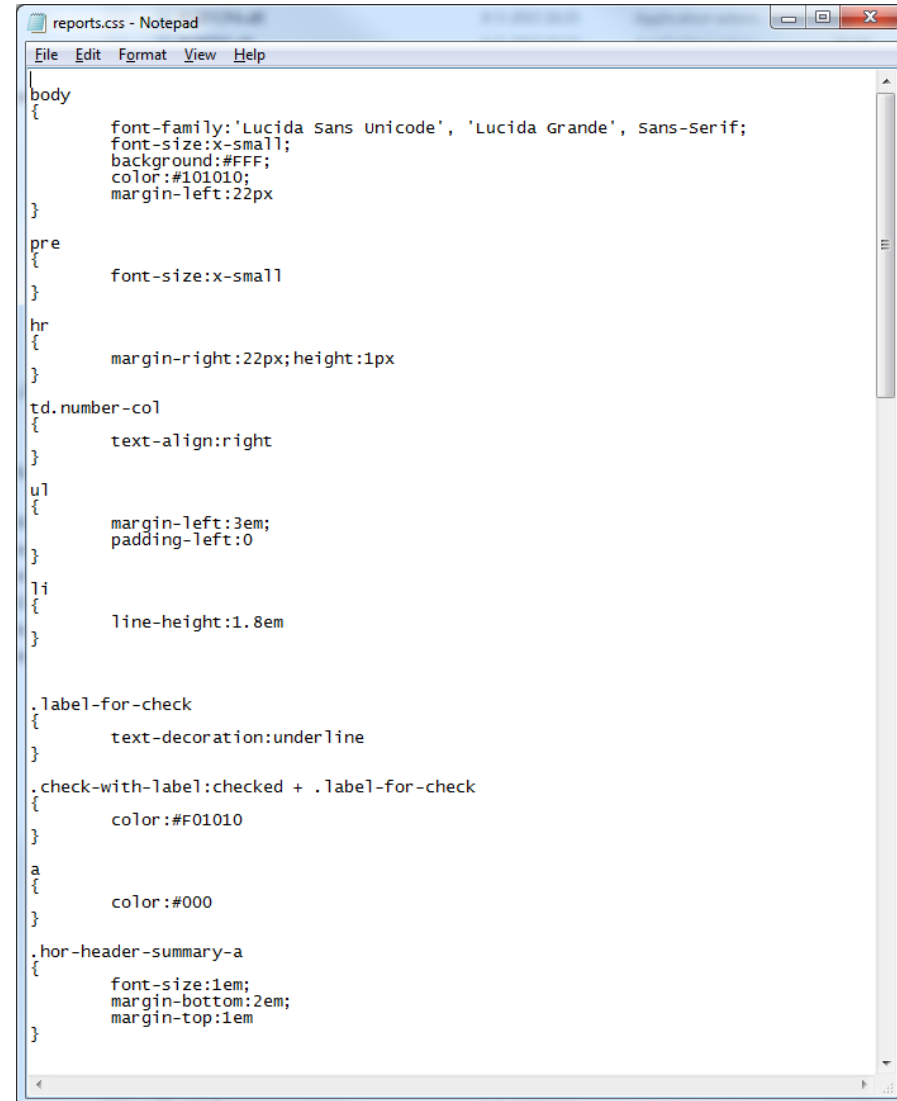
- Output of HTML reports using customized *style sheet*
 - Possible to modify text font, colors, line height etc.
 - Reports.css located in install directory/programs




Parts List

CADSTAR Design Editor Version 17.0.B.89
 Design: C:\CADSTAR170_Demos\Projects\Customer Design Hspeed\HSpeed.pcb
 Design Title: Reference design
 Date: woensdag 23 september 2015
 Time: 13:43

Part Name/Number	Description	Qty	Comps.	Part Acceptance
0Eo 1% 0603 STD		12	R11 R13 R15 R17-18 R24 R90-91 R95 R97 R102 R207	
100E 1% 0603 STD		2	R98-99	



```

reports.css - Notepad
File Edit Format View Help

body
{
    font-family:'Lucida sans unicode', 'Lucida Grande', sans-serif;
    font-size:x-small;
    background:#FFF;
    color:#101010;
    margin-left:22px
}

pre
{
    font-size:x-small
}

hr
{
    margin-right:22px;height:1px
}

td.number-col
{
    text-align:right
}

ul
{
    margin-left:3em;
    padding-left:0
}

li
{
    line-height:1.8em
}

.label-for-check
{
    text-decoration:underline
}

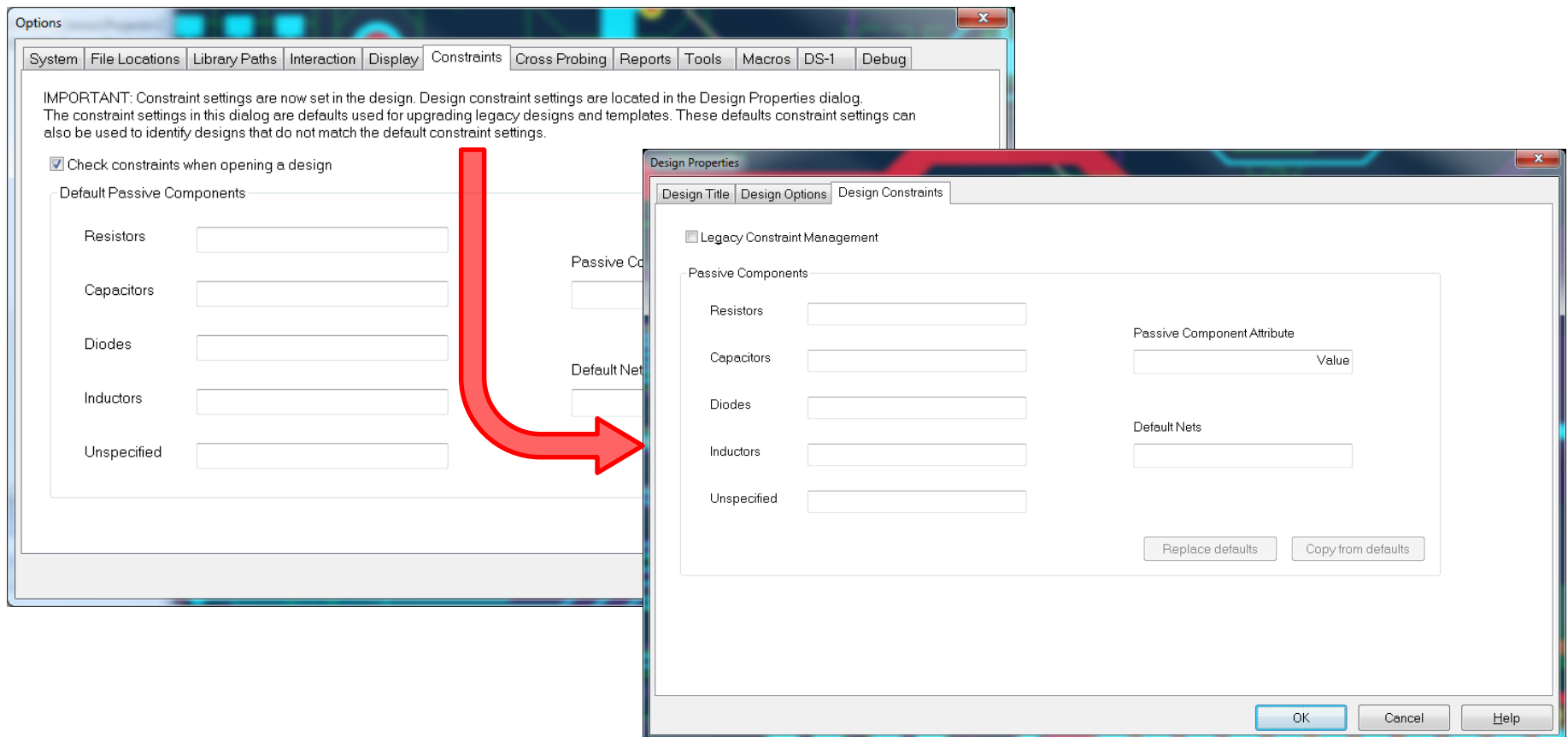
.check-with-label:checked + .label-for-check
{
    color:#F01010
}

a
{
    color:#000
}

.hor-header-summary-a
{
    font-size:1em;
    margin-bottom:2em;
    margin-top:1em
}
  
```

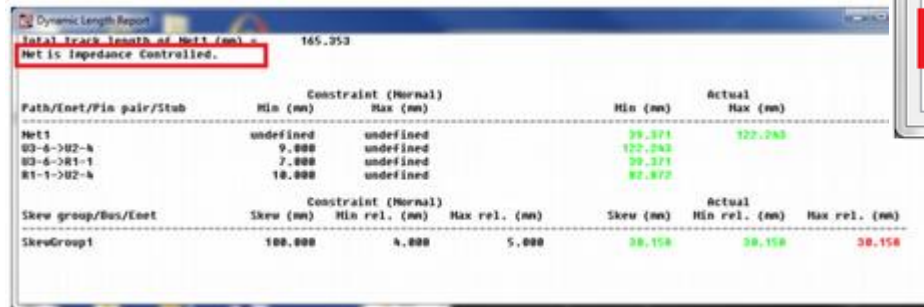
What's targeted for CADSTAR 17.0

- Design Editor - Tools - Options - Constraints to become a design setting
 - Multiple users may work on the design who may be set differently
 - Setting requirements may vary from design to design



What's targeted for CADSTAR 17.0 in the Place & Route Editor

- Reporting improvements
 - Full electrical net name in crosstalk report
 - Previously net names were truncated to 20 characters
 - Notification of impedance controlled nets has been added to the Dynamic Trunk Report and the Dynamic Delay Report



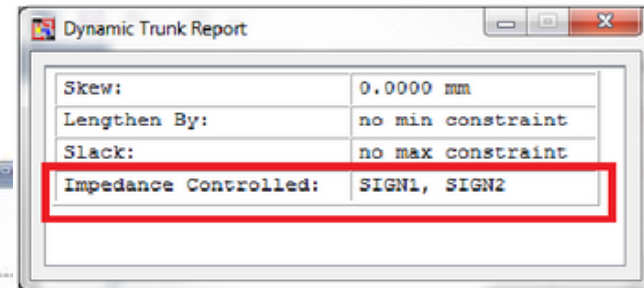
Dynamic Length Report

Total Track Length of Net1 (mm) 165.253

Net is Impedance Controlled.

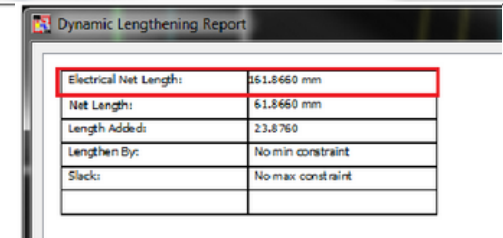
Path/Net/Pin pair/Stub	Constraint (Normal)		Actual	
	Min (mm)	Max (mm)	Min (mm)	Max (mm)
Net1	undefined	undefined	39.371	127.243
U3-6->U2-4	9.000	undefined	127.243	
U3-6->R1-1	7.000	undefined	39.371	
R1-1->U2-4	10.000	undefined	82.872	

Skew group/Bus/Net	Constraint (Normal)			Actual		
	Skew (mm)	Min rel. (mm)	Max rel. (mm)	Skew (mm)	Min rel. (mm)	Max rel. (mm)
SkewGroup1	100.000	4.000	5.000	38.158	38.158	38.158



Dynamic Trunk Report

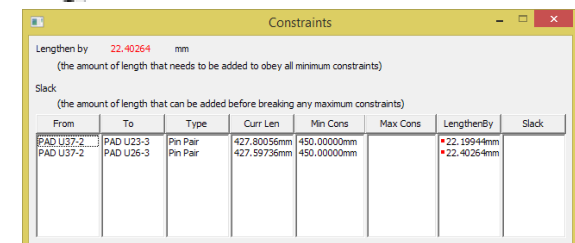
Skew:	0.0000 mm
Lengthen By:	no min constraint
Slack:	no max constraint
Impedance Controlled:	SIGN1, SIGN2



Dynamic Lengthening Report

Electrical Net Length:	161.8660 mm
Net Length:	161.8660 mm
Length Added:	23.8760
Lengthen By:	No min constraint
Slack:	No max constraint

- Total E-Net length has been added to the Dynamic Lengthening Report
- Dynamic updating of Constraints dialog during interactive lengthening



Constraints

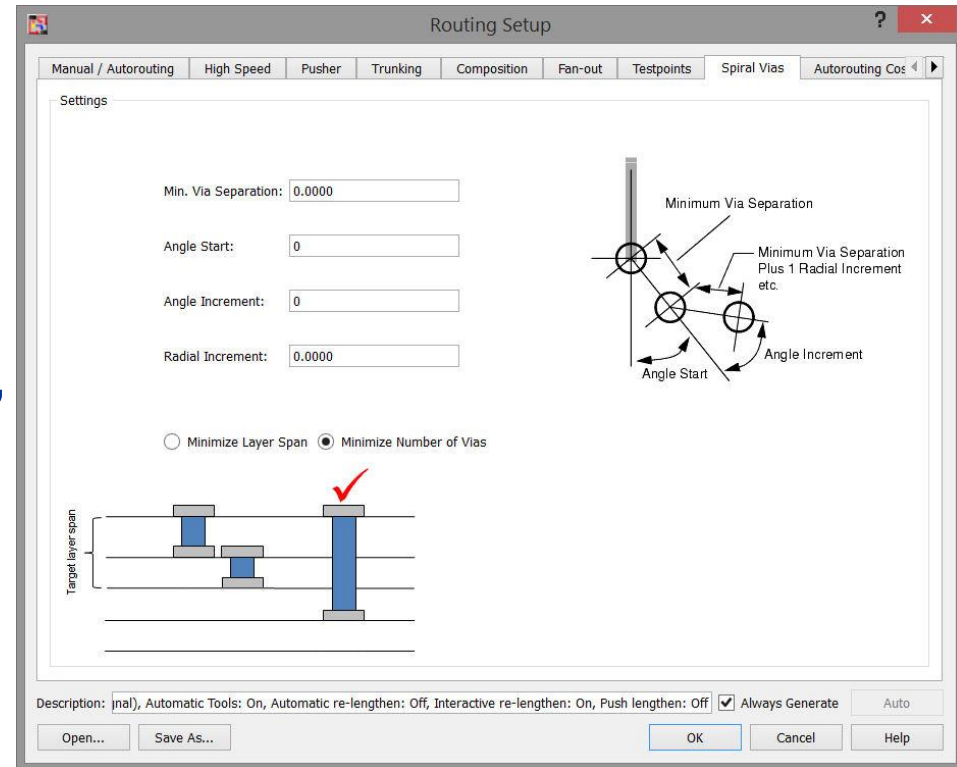
Lengthen by 22.40264 mm
(the amount of length that needs to be added to obey all minimum constraints)

Slack
(the amount of length that can be added before breaking any maximum constraints)

From	To	Type	Curr Len	Min Cons	Max Cons	LengthenBy	Slack
PAD U37-2	PAD U23-3	Pin Pair	427.80056mm	450.00000mm		22.19944mm	
PAD U37-2	PAD U26-3	Pin Pair	427.59736mm	450.00000mm		22.40264mm	

What's targeted for CADSTAR 17.0 in the Place & Route Editor

- Fan-out improvements
 - Use minimum via span
- Example
 - Requested Layer Pair = 10:30
 - Available Layer Pairs = 10:20, 20:30 and 10:40



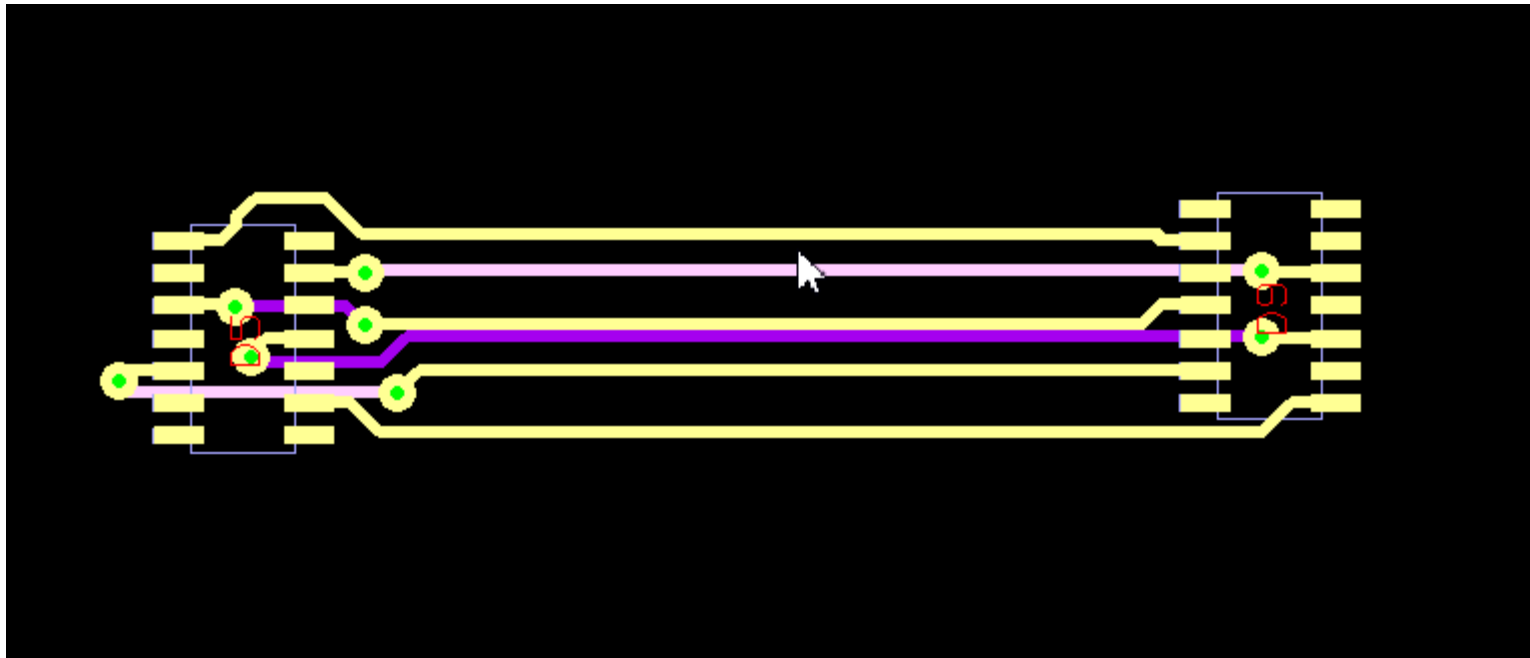
What's targeted for CADSTAR 17.0 in the Place & Route Editor

- Activ-45 move track

- Dragging tracks when in activ-45 mode

- Activ-45 pushing
 - Activ-45 sliding

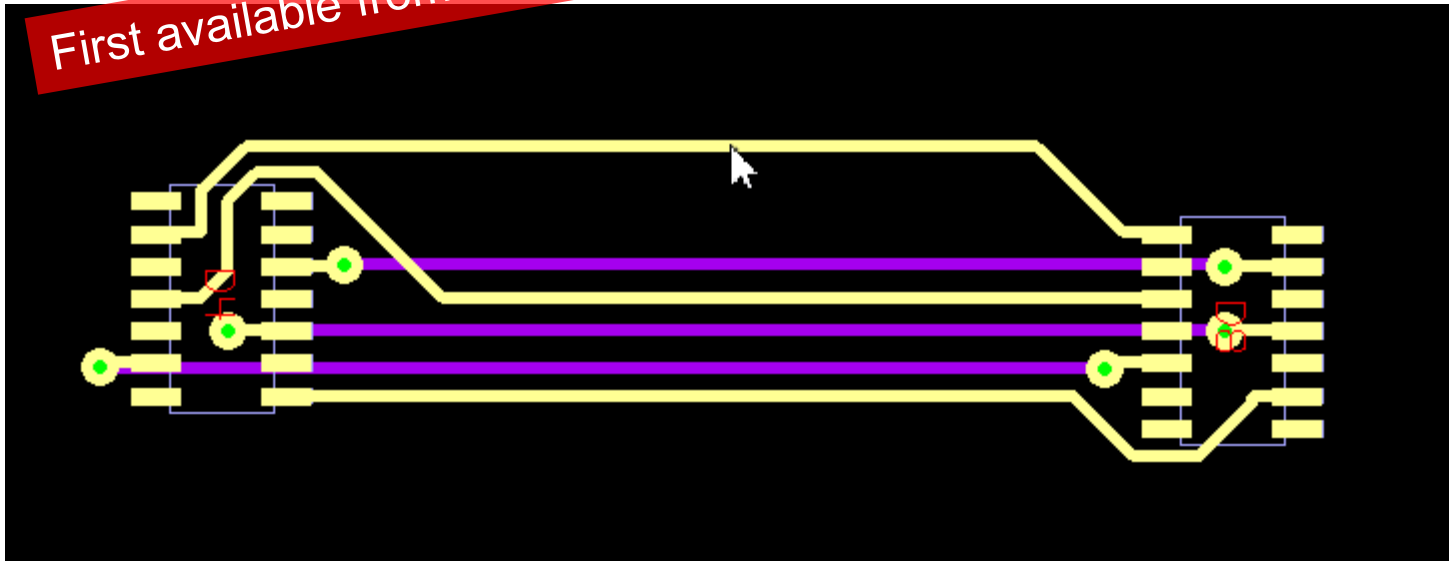
First available from the CADSTAR 17.0 patch 1 (media release) on



What's targeted for CADSTAR 17.0 in the Place & Route Editor

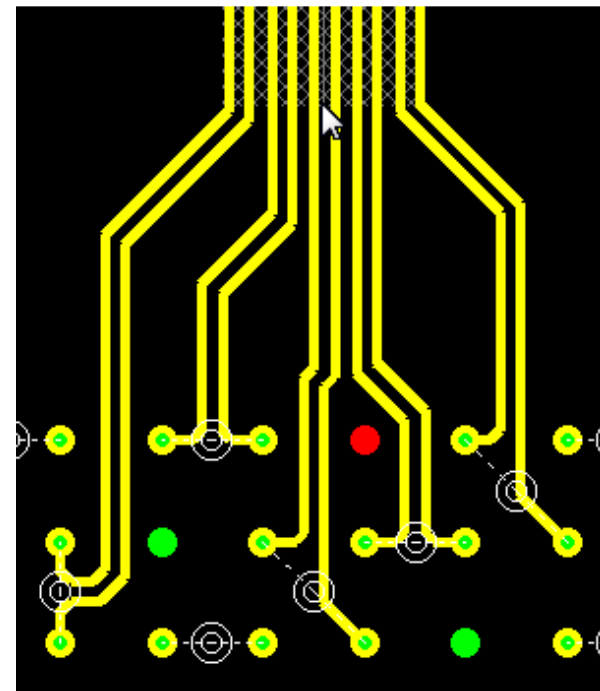
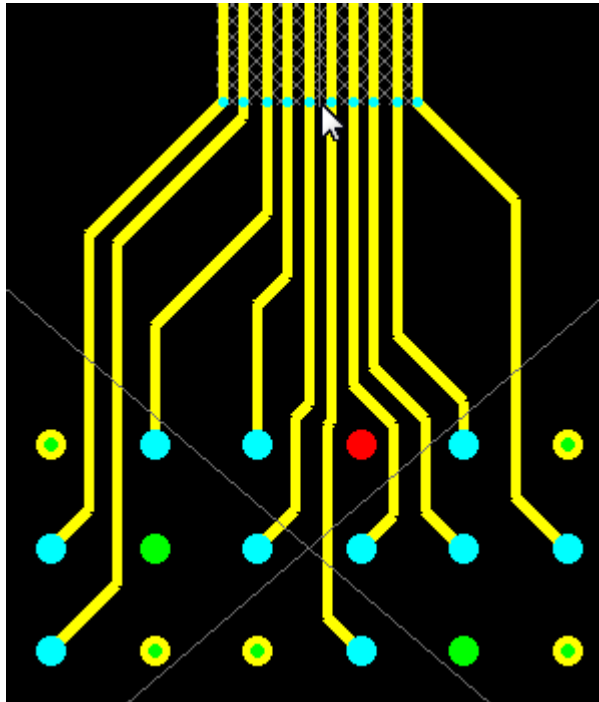
- Activ-45 lengthen move track
 - Updating lengthen when dragging tracks in **activ-45 mode** (media release) on

First available from the CADSTAR 17.0 patch 1 (media release) on



What's targeted for CADSTAR 17.0 in the Place & Route Editor

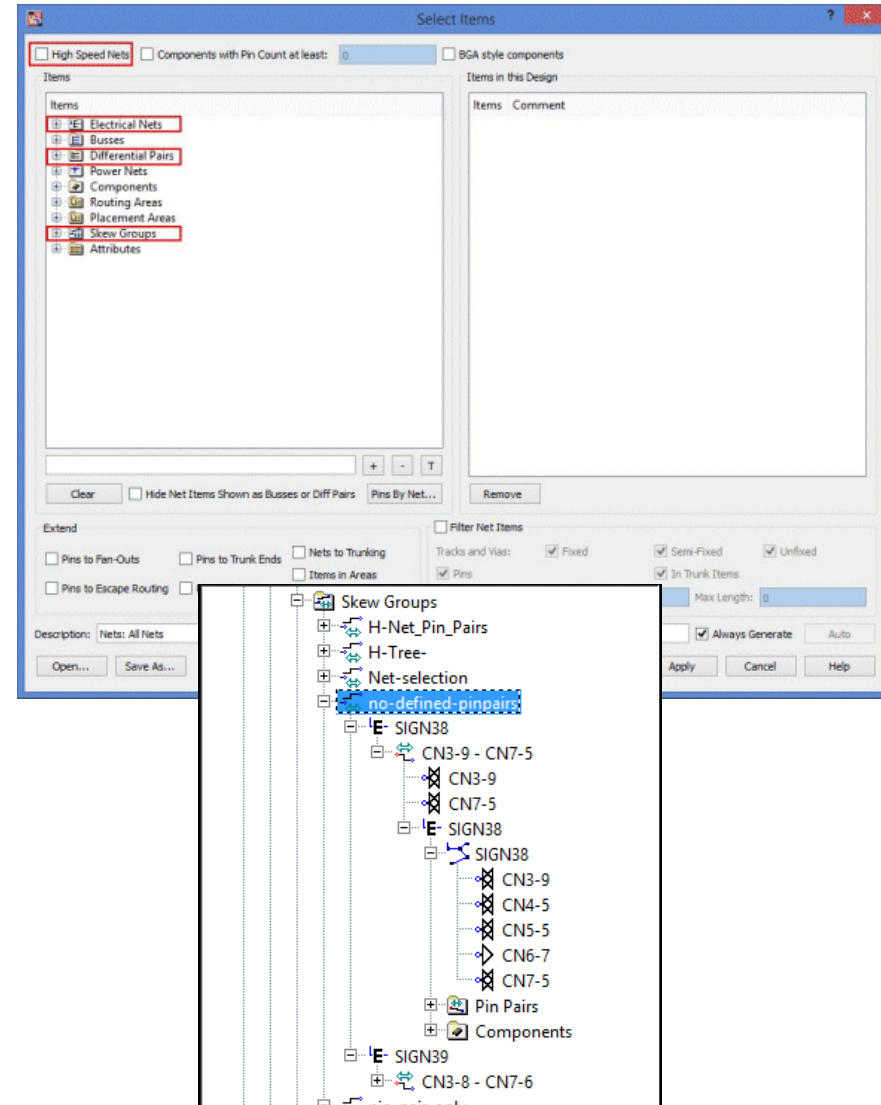
- Trunk end router diff pair improvements
 - Better differential pair routing to the pin



What's targeted for CADSTAR 17.0 in the Place & Route Editor

- **Select Skew Groups**

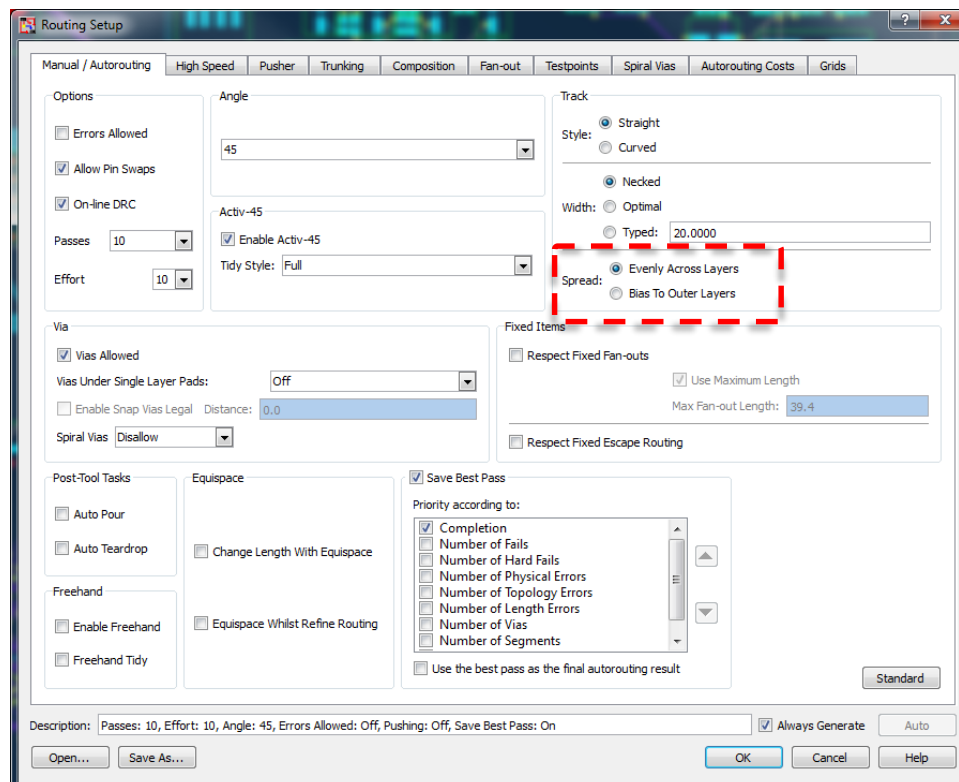
- Skew groups is now available as an item type in the Select Items dialog so that you can select all the skew groups in a design or select specific skew groups by name
- Allows skew group specific operations such as lengthening
- Also skew groups can now be used to perform remote select operations from the tree view



What's targeted for CADSTAR 17.0 in the Place & Route Editor

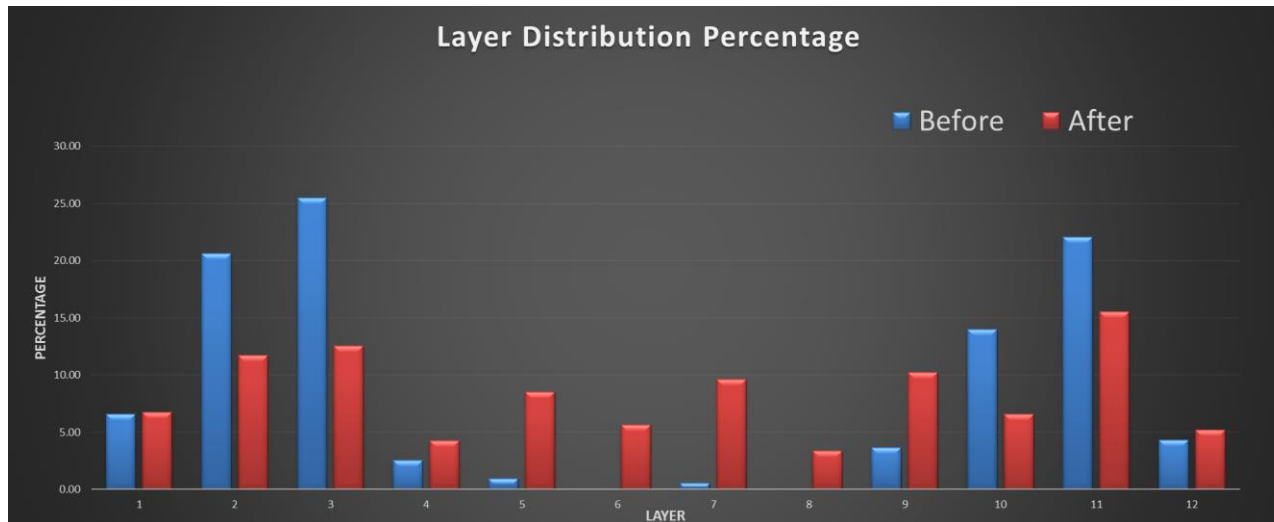
- Routing Layer Spread

- Updates have been made to the Dragon and Classic autorouter so that it is now possible to specify if routing results are spread evenly across layers or biased towards the outer layers



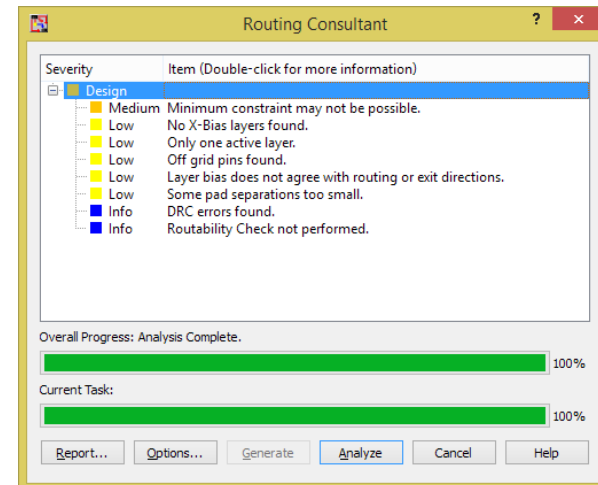
What's targeted for CADSTAR 17.0 in the Dragon Router

- Repeatability
- Re-balance layer usage (routing layer spread)
 - Don't only use outer layers when autorouting
 - Initial results suggest autorouter performance and completion improvements
 - 2x to 3x performance improvement on blind/buried via designs
 - Make option switchable



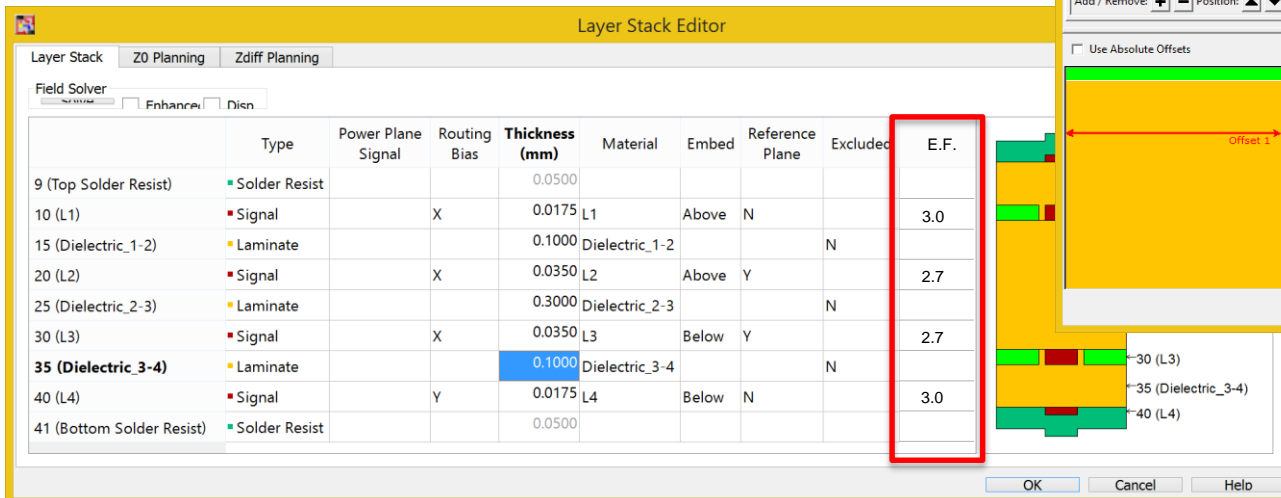
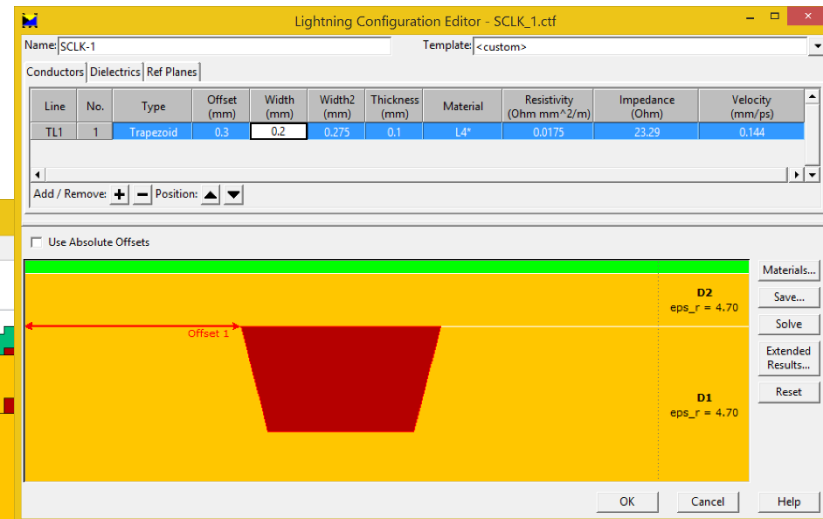
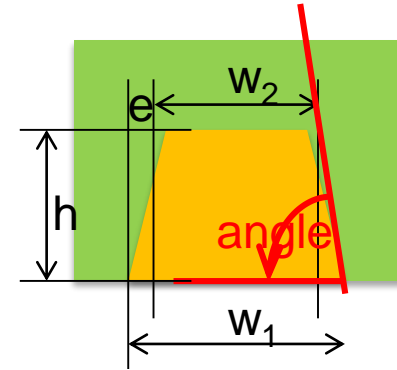
What's targeted for CADSTAR 17.0 in the Dragon Router

- Run routing consultant on selected items
 - Consultant only analyses selected items
 - On canvas
 - Items in a task in a strategy
 - Items analysed depends on check
 - Nets
 - E-Nets
 - Differential pairs
 - Items
 - Templates
 - Components



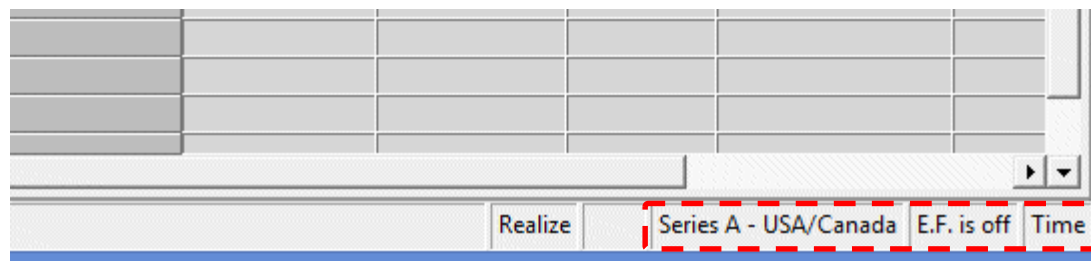
What's targeted for CADSTAR 17.0 in the Place & Route Editor

- Layer stack editor improvements
 - Support for Etch Factor has been added to the Layer Stack Editor
 - Etch factor (E.F.) is given as a ratio of h/e
 - Can be toggled on/off from the status bar



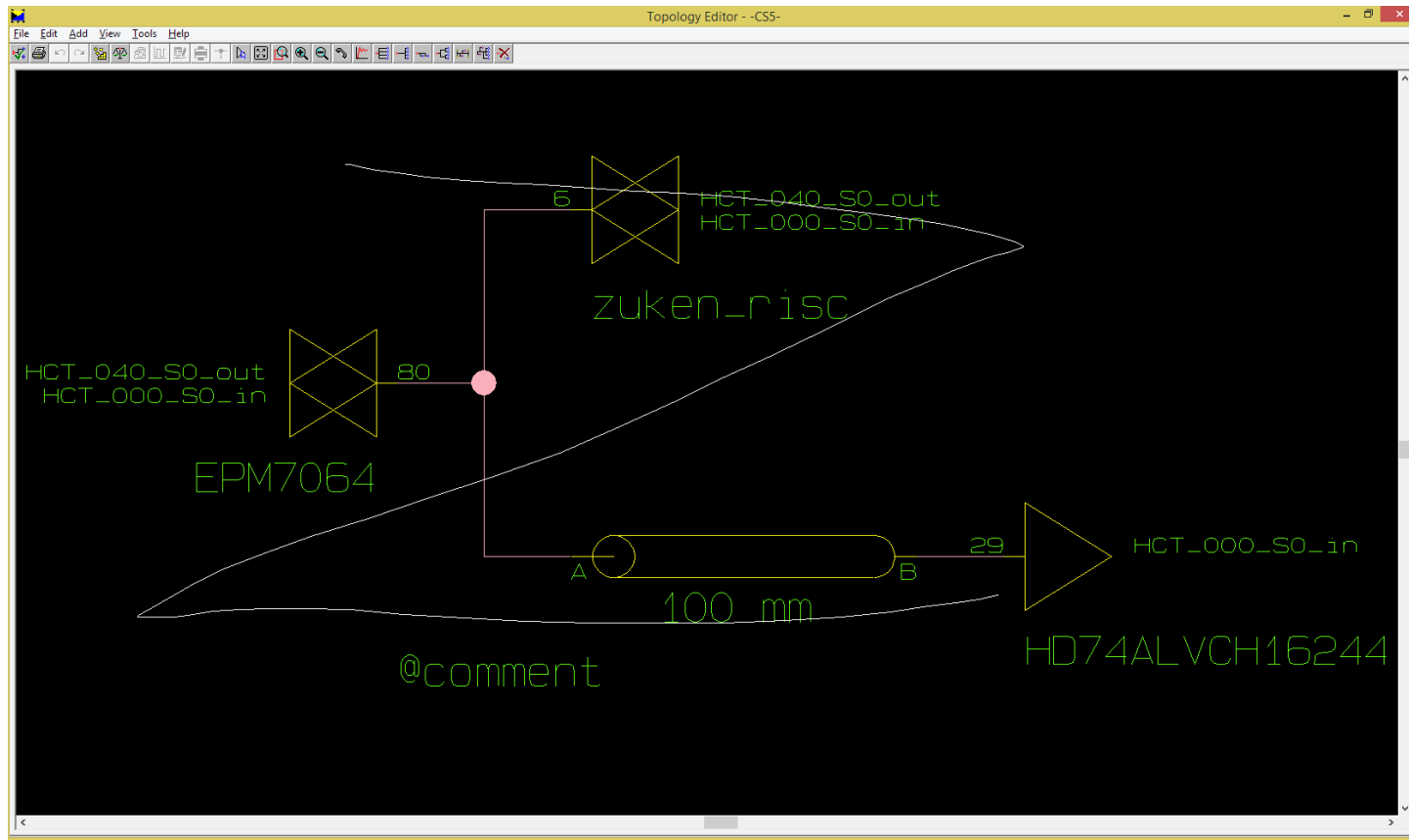
What's targeted for CADSTAR 17.0 in the Constraint Manager

- Default to length mode
 - First launch of CM or CB for a design, length mode is enabled by default instead of time mode
- Constraint Manager Status Bar
 - The settings of three values displayed in the Constraint Manager status bar can now be changed by clicking on the status bar windows
 - Clicking in the Variant window launches the Variant dialog, allowing you to choose a new variant
 - Clicking in the Etch Factor window toggles between the on and off settings
 - Clicking in the Mode window toggles between length and time modes



What's targeted for CADSTAR 17.0 in the Constraint Manager

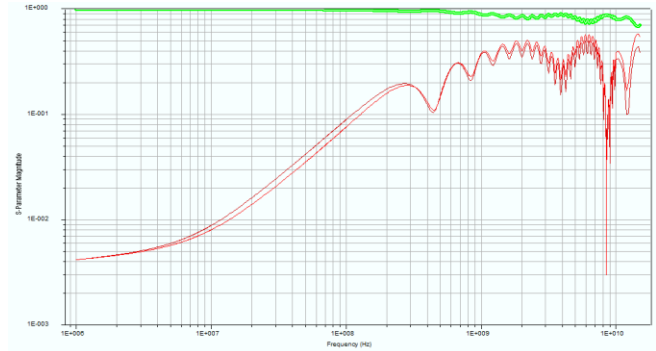
- Stroke support added to Topology Editor/Viewer canvas



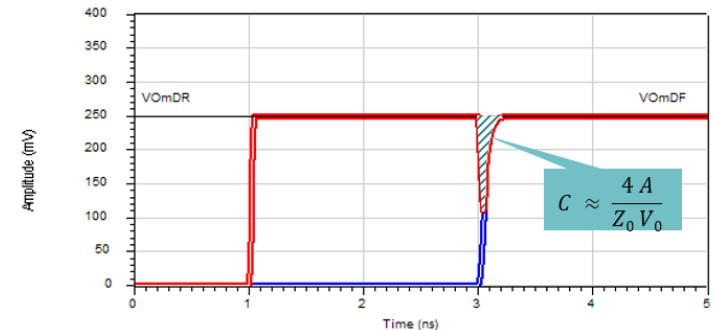
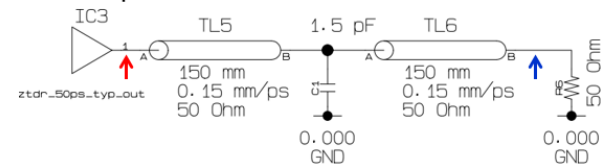
What's targeted for CADSTAR 17.0 in Signal Integrity

- S-Parameter improvements
 - Consideration of complex losses of transmission lines
 - Supporting serial channel analysis up to 15 GHz

- TDR model support
 - Provided TDR models (defined step functions) allow impedance profile over time like in a TDR (Time Domain Reflectometry) scope
 - Allows transmission line investigations for discontinuities along the TL (TDR Channel Analysis)



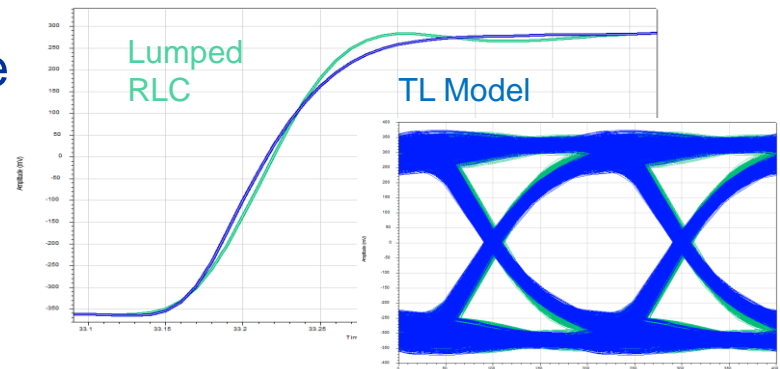
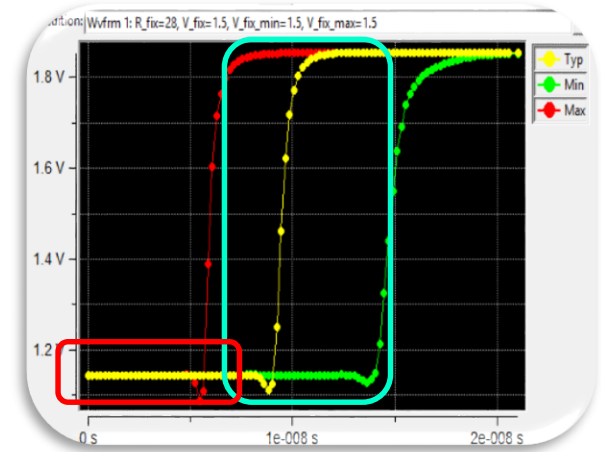
Simulation set-up:



What's targeted for CADSTAR 17.0 in Signal Integrity

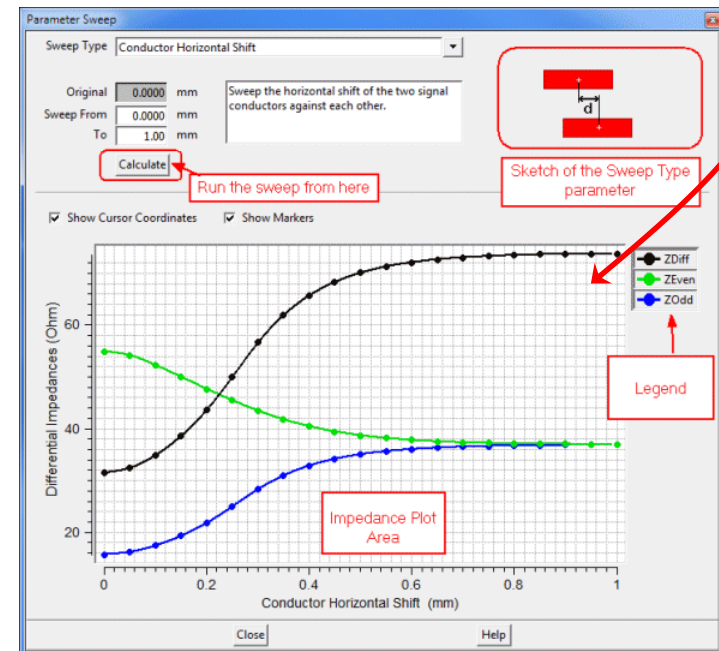
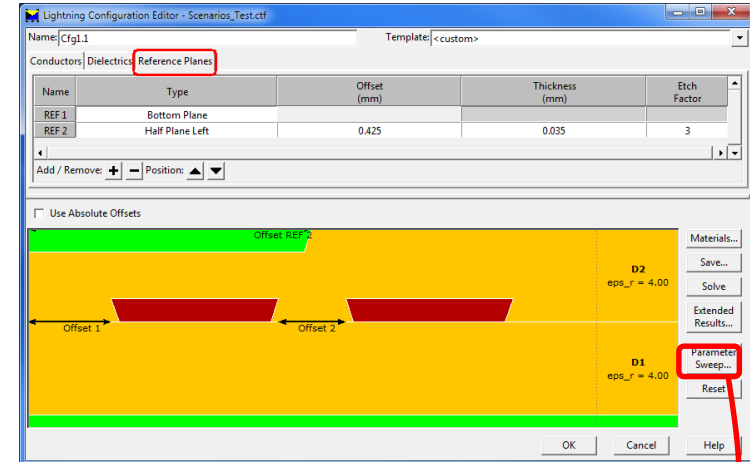
- Improved Overclocking handling of Buffer driver models
 - Automatic removal of initial delay in switching characteristics of IBIS driver models
 - more accurate simulation results in case of poor buffer models (badly created by IC vendor)

- Improved Package modelling
 - Use of TL model instead of lumped element model
 - better timing result accuracy



What's targeted for CADSTAR 17.0 in Signal Integrity

- Supporting **Etch Factor** definition in the Configuration Editor (and CM)
 - compatible with former trapezoidal conductor support
 - Etching for half-planes also
 - More accurate what-if studies considering manufacturing process
- Impedance Parameter Sweep functionality for conductors and dielectrics for:
 - Single conductors and
 - Differential pair configurations
 - Allows quick overview of material or geometrical variations

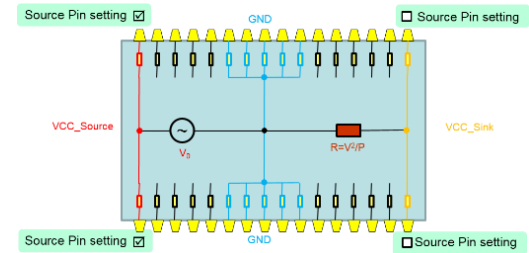


What's targeted for CADSTAR 17.0 in Power Integrity Advance

- DC analysis network optimization for performance improvements
 - Up to 60 times faster network solution
 - Overall speedup depends on network complexity, average value ~15 times faster
- Pin-based DC-Source handling (source and sink in one component), rather than complete components only
 - provides rapid and detailed DC Analysis

Pin	Name	Power Bus	# Power	# Ground	Source	Power Consumption (W)	Package Resistance (Ω)	Min IC Voltage (V)
IC1	IC1	VCC_GND	3	2	<input type="checkbox"/>	0.000	0.001	3.000
IC2	IC2	VCC_GND	1	2	<input type="checkbox"/>	1.000	0.001	5.000
IC3	IC3	VCC_GND	5	2	<input checked="" type="checkbox"/>	1.000	0.001	5.000
IC4	IC4	VCC_GND	1	3	<input type="checkbox"/>	1.000	0.001	5.000
IC5	IC5	VCC_GND	5	2	<input type="checkbox"/>	1.000	0.001	5.000
IC6	IC6	VCC_GND	1	3	<input type="checkbox"/>	1.000	0.001	5.000
IC7	IC7	VCC_GND	5	2	<input type="checkbox"/>	1.000	0.001	5.000
IC8	IC8	VCC_GND	1	3	<input type="checkbox"/>	1.000	0.001	5.000
IC9	IC9	VCC_GND	1	1	<input type="checkbox"/>	1.000	0.001	5.000
IC10	IC10	VCC_GND	2	6	<input type="checkbox"/>	1.000	0.001	5.000
IC11	IC11	VCC_GND	1	2	<input type="checkbox"/>	1.000	0.001	5.000

Half-checked state of the checkbox indicates that some pins have a source setting, and some not.



Set Source Pins

Power pins of IC3 at net VCC

ID	Pin	Source
11		<input type="checkbox"/>
12		<input type="checkbox"/>
14		<input checked="" type="checkbox"/>
17		<input checked="" type="checkbox"/>
19		<input type="checkbox"/>

OK Cancel Help

What's targeted for CADSTAR 17.0 in Power Integrity Advance

- Usability Improvements

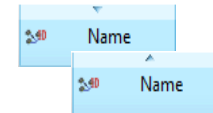
- Single-click opens editors in Classification view

- Use of flying icons

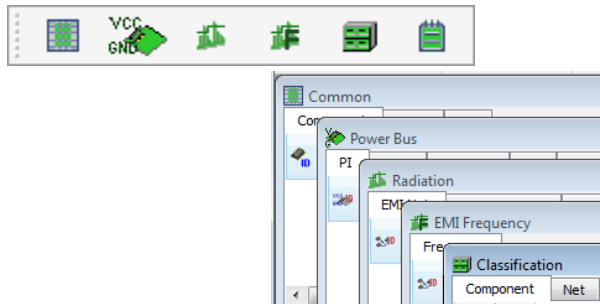
- Sorting always moves tables to top-row

- Sorting indicator shown in column header

VAPCCORE_PM_GND	VAPCCORE_PM_GND	VAPCCORE_PM	GND
VAPDDR_1P8V_GND	VAPDDR_1P8V_GND	VAPDDR_1P8V	GND
VAPEBI_2P9V_GND	VAPEBI_2P9V_GND	VAPEBI_2P9V	GND



- New toolbar to raise specific windows in front easily

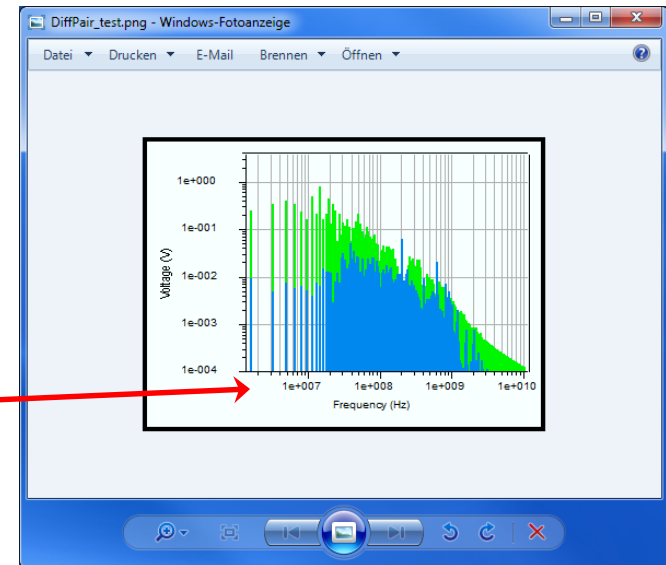
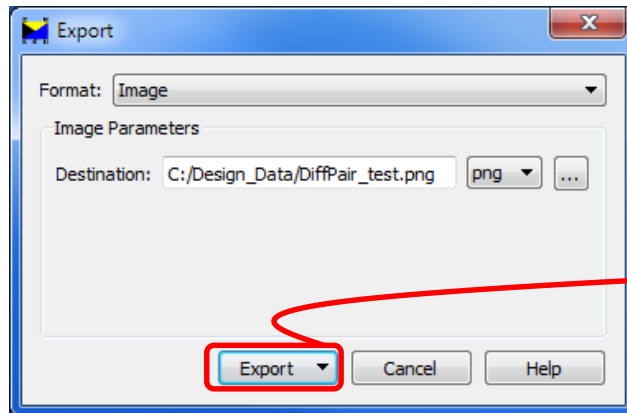


→ Reduces Setup time of EMI and PI Analysis

→ Faster turn-around in What-if studies

What's targeted for CADSTAR 17.0 in the Power Integrity Advance

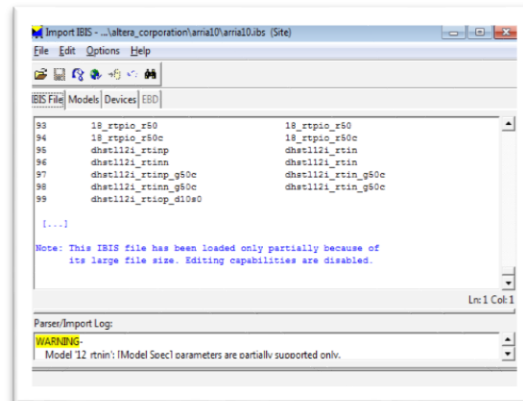
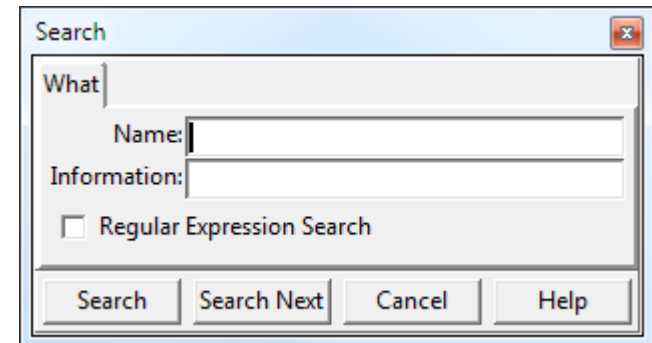
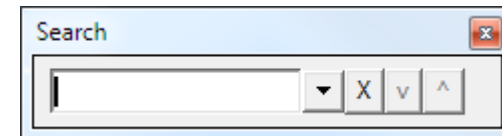
- Image Export
 - Now export of results directly into graphic formats possible
 - Supports documentation of simulation results
 - Supports JPG/PNG/BMP



What's targeted for CADSTAR 17.0 in the Simulation Library Manager

- Simulation Library Manager usability improvements
 - Searching and filtering improved
 - Unified with IBIS and SPICE import
 - quicker operations on large libraries

 - Support of very large IBIS files
 - allows smooth operations on very large IBIS files



What's targeted for BML10.1

(All plans are subject to change)

Presented by Jeroen Leinders
CADSTAR Distribution Manager

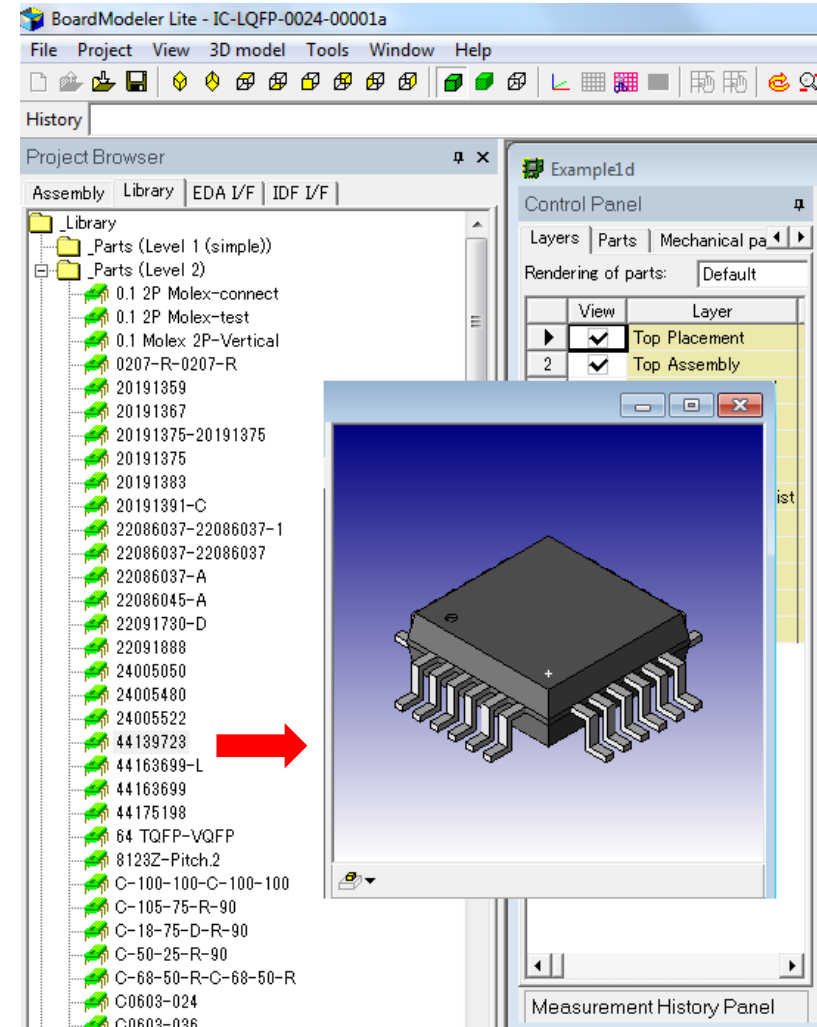


What's targeted for BML10.1

- Support of Unicode
 - Support of using special characters (e.g. German) when local language of Microsoft is used
- Support of drill holes within copper shapes when exporting a design to STEP Assembly format

What's targeted for BML10.1

- 3D preview window
 - Pre-viewing 3D models when selecting a model from the list in the Library tab of the Project Browser





ZUKEN®

The Partner for Success